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ALCHEMIST



Price 1/-

Christmas, 1956.



. . . the glorious sun

Stays in his cours and plays the Alchemist.

Turning with splendour of his precious eye,

The meagre cloddy earth to glittering gold.

—KING JOHN III.

The Irish Madonna



[By courtesy of "Irish Independent."]

The Students, Technicians and Technologists of Dublin dedicate this Annual to those Students, Technicians and Technologists who died fighting in the streets of Budapest in the cause of Christianity and Freedom.

The above photograph is of a painting of "Our Lady of Consolation" which was taken to Hungary in the 17th century by the Irish Bishop, Dr. Walter Lynch, when he fled from Ireland during Cromwell's regime. To-day this picture, known to all Hungarian Catholics as the "Irish Madonna" hangs in the Cathedral town of Gyöer and is a perpetual source of solace, confidence and inspiration to the people of that unhappy land, who now strive to release themselves from the bondage of brutality, atheism and materialism.

The picture is said to have shed tears of blood for three hours on March 17th, 1697, when religious persecution in Ireland was at its height. The occurrence was submitted to every possible test. The walls were stripped and the painting taken from its frame by the priests in search of a natural cause of the phenomenon. But no natural cause was found and to this day the cloths which were used to wipe away the blood are preserved.

Editorial

**CITY OF DUBLIN
VOCATIONAL
EDUCATION
COMMITTEE**

**INSTITUTE OF SCIENCE
AND TECHNOLOGY**

THE ALCHEMIST
Vol. 1. No. 3.
CHRISTMAS 1956.

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The Alchemist is the annual magazine published by the students of the above Institute every Christmas. Its material, editing, lay-out and publication represents the work of the students alone without the benefit of any professional help. If you find any mistakes in this publication please remember that they have been put there for a purpose. Some people are always looking for mistakes and we have tried to please everybody.

Printed by "The Tipperary Star,"
Thurles.

THIS third edition of the 'Alchemist' represents our first excursion into the realms of professional publication. For us it is a momentous occasion having graduated from the stencilled amateurish efforts of a single class, to the all-school magazine now in your possession — all within three short years. We are confident that you will excuse the Annual's many imperfections, remembering that it is our first such attempt and that as mere students of science and technology, we do not profess to great literary heights. We can hardly hope to vie with Institutes devoted exclusively to literature and the arts!

Of late we have been asked to explain the policy of the 'Alchemist.' Why publish a magazine at all? In an Institute dedicated to the sciences, the arts can be easily neglected. It is our hope that in producing this annual we create interest, first in literature, then in public speaking and finally in the other branches of the arts and humanities. So far, we can modestly claim a fair measure of success as evinced by the proposal to form now a Senior Students' Union.

Present Editorial policy has expressed itself in the desire to both educate and entertain. We have thus striven to maintain equilibrium between the humorous and the technical and in so doing have produced a magazine which we believe to be unique! At the same time we hope that the 'Alchemist' will serve to focus attention on Technological education by the general public, so many of whom are unaware of our existence.

The technological report presented in June did much to cast the spotlight on us and our fellow technological students in Dublin. We would here commend all to its study, and regret that its comprehensiveness prevents us from printing a synopsis which would do full justice to so scholarly a work. It will suffice to comment that the need for more technologists and technicians was stressed and that Kevin Street figured prominently in the scheme envisaged for the future development of higher technical and technological education in Dublin.

We take the liberty of concluding with the closing paragraph of the Report as it summarises the future of Irish Technical education.

'The young people trained in the various courses outlined in the Report may have to play an important role not only in the technical sphere but also in the industrial and social life. This will demand of them not only professional competence but also a broad appreciation of human qualities and human values. In such circumstances it is important that their training should cover a wider range than that of purely technical studies and should, above all, be accompanied by a spiritual development of character and an expanding realisation of one's obligation to God, to one's neighbour and to society.'

Science, The Scientific Method and Research

M. J. CRANLEY, M.Sc., M.I.C.I., F.R.I.C., Principal.

NOW among all the benefits that could be conferred upon mankind I found none so great as the discovery of new arts, endowments and commodities for the bettering of man's life. For I saw that, among the rude people in primitive homes, authors of inventions and discoveries were consecrated and numbered among the gods.—Roger Bacon.

Science has been defined as the classified knowledge of natural phenomena and the relations between them. Research, on the other hand, is the application of human intelligence in a systematic manner to a problem whose solution is not immediately known. Science is not research, although research is usually necessary to advance science. The observation and recording of data may advance science by providing additional information, but this is not research unless it is used to solve a problem. Science then is a body of knowledge—research a process of solving problems. The main branches of Science such as Physics, Chemistry, Biology, Astronomy, suggest that Science is concerned with external things, for example, air, earth and sea, animals and plants, celestial bodies and so on. All of us have some knowledge of all of those things and this knowledge we have acquired in our everyday life. But this knowledge in itself is not Science, since it must be gained by a special method and used for a special purpose, namely, to explain or account for natural phenomena and possibly have also the secondary objective of exploiting these phenomena for man's purpose. This special method is usually known as the **Scientific Method**. The characteristic feature of the Scientific Method is that its observations are capable of obtaining universal agreement. In other words the facts must be capable of verification. Such verification usually involves measurement and this quantitative aspect of the Scientific Method which is the hall-mark of Science, has led to the recognition that certain phenomena conform to certain types of patterns which are now formulated as **Scientific Laws**. These laws summarise the behaviour of things and provide the foundation on which explanatory generalisations or **Scientific Theories** are built, for example, the Theory of Gravitation, Atomic Theory, the Theory of Relativity. Such theories can only be accepted when they are confirmed by experiment or observation and may at any time be

modified in the light of new experimental data.

The Scientific Method can be summarised as follows:—

- (1) The realisation of the existence of a problem—the isolation and framing of the problem and the conscious and deliberate attempt to solve it.
- (2) Observation of either natural events or of experiment designed to provide the information or other data required.
- (3) The classification of this data with a view to establishing laws which should preferably be quantitative.
- (4) The propounding of Scientific theories with a view to understanding and explaining these laws and related facts and to suggesting the existence of hitherto unknown knowledge which may then be sought as confirmation of the theory.

The word "Research" just like the word scientist is much abused to-day. A research investigation may have taken many years of work by men of outstanding ability or it may be a study of a sales problem or a traffic problem, or even looking up some data in a reference book in a library—all are unfortunately lumped together to-day under "Research." True Scientific Research is a slow business—one does not turn out startling discoveries or inventions every month or even every year. As Tennyson said: "Science moves but slowly, slowly, creeping on from point to point." For instance, in the 18th century it took Cavendish ten years to prove that Hydrogen and Oxygen combined to produce water. Around the beginning of the present century the Curies spent ten years in isolating and determining the properties of Radium.

Different types of research are recognised to-day:—

(1) **Fundamental research**, which is mainly carried out by universities and research institutes and nowadays also to some extent by large industrial research organisations, is investigation in any field of scientific endeavour with the prime object of finding out what things are and how and why processes occur. Until recently this type of research was usually known as **Pure Research**.

(2) **Applied Research** has a more precise and practical objective, for

instance, the discovery of a new drug to combat a certain disease or of a new type of additive for petrol.

(3) **Development Research** has as its purpose the exploitation of the results of Fundamental and Applied Scientists. This often involves the development of better or new ways of producing goods more efficiently and is usually carried out by engineers.

Applied Research and Development Research are often classified together as **Industrial Research** with the following sub-divisions: (a) **Process Research**—to determine the one best way of producing goods under certain fixed conditions, (b) **Product Research**—to discover new or improved products, (c) **Raw Material Research**—to improve the supply, quality or cost of raw materials, (d) **Waste Utilisation Research**—to find uses for the waste products of an industry.

The effect of the ever-increasing amount of research in the development of science and in the application of scientific knowledge is evident to all of us in our daily life. Radio, television, motor-cars, aeroplanes, telephones, cinemas, synthetic dyes and drugs, antibiotics and Nuclear Energy, are only a few of the spectacular products of the application of science during the last fifty years.

Expenditure on research in Great Britain in 1954-'55 is estimated as approximately 233 million pounds, of which 158 million pounds was spent on Government Defence Research. The average cost of research per fully qualified graduate is just over £3,000 per annum. United States annual expenditure on research is estimated as 4,500 million dollars, which can be converted to an equivalent of 535 million pounds when allowance is made for the rate of exchange and the fact that the U.S. population is three times that of Britain. Thus, about twice as much per head is spent on research in the U.S.A. as in Britain. Furthermore, the 76 million pounds spent annually in Britain on civil research can be converted to £4 million, allowing for the difference in population between Britain and Ireland. Assuming the figure of £3,000 as the cost of research for each qualified graduate, we should then have 1,300 research scientists or engineers in Ireland if we were to put the same effort into research as Britain. Are there 1,300 research scientists and engineers employed in Ireland, or 500 or even 200?

Spies and the National Library have one thing in common, they both use

MICROFILM

By S. Corcoran

PICTURE-GOERS will remember James Mason starring as "Cicero," the famous Germany spy. This Armenian employed as a valet in the British Embassy in Ankara, Turkey, gained access to some of the most valuable documents of World War II and thrilled the world with his daring. His photographic records of the secrets locked away in the safe of the British Ambassador earned him over £500,000 and the title of the greatest spy of the War! He owed his success solely to one of the most amazing scientific discoveries of modern times—the art of writing by light, micro-film photography.

IT'S FOOLPROOF!

This medium of recording by light is the safest, fastest, most economical and foolproof way of coping with and filing documents. On one hundred feet of 16 m.m. film, two and a half thousand letter size documents can be photographed by one inexperienced person in less than two hours! Such documents as cheques, vouchers and legal papers, can be filmed accurately on this miniature film. When processed and filed, the finished microfilmed material occupies about one per cent of the space required by the originals, and as mentioned before, many thousand documents can be held in a packet similar in size to that of twenty cigarettes. There are innumerable advantages (as Cicero long realised) such as protection against fire and other accidents; solution of storage problems, and most important for him, the duplicating of bulky or highly important letters or scripts. In addition microfilm is non-inflammable, can endure a great degree of heat, and to the best of our knowledge, will last indefinitely. It is also alteration, extraction and substitu-

tion proof. The micro-film system of storing and filing documents recommends itself as the most obvious and satisfactory method to firms experiencing storage problems. Consider the amount of space employed by the back copies of a daily newspaper as an example, the micro-film records would require only 1% of the original storage space.

EFFICIENT

When photographed, the film is inserted in a projector which incorporates a built-in screen and can be viewed by a group of people, the projected image being larger or smaller than the original according to the camera used. The duplicating advantages of the system is put to perfect use by the National Library of Ireland where cameras are continuously recording centuries old documents and irreplaceable manuscripts, together with books and letters which are too fragile to be handled continuously. All this material, when microfilmed, provides a very efficient system whereby a student or any person may have access to photographic copies of historical or other interest which would otherwise be denied them.

THE FUTURE

Microfilm photography is bringing about a revolution in the field of written records. At present it embraces only the scientific and business worlds, but who knows how soon it will invade the realm of the "man in the street?" It is not inconceivable that a newspaper photographed on microfilm will be produced and the news read on a small portable screen. At least it will prove a more laudable application of the discovery than that employed by "Cicero"—but it poses a new problem—what will we use to hold our fish and chips?

One morning on a tour of inspection a Colonel stopped at the kitchen of one of the Companies in his command, where he met two K.P.'s with a large soup kettle.

"Here, you K.P.," he shouted, "Let me taste that soup."

One of the men hurried back after a

large spoon, which he handed respectfully to the Colonel. The officer plunged the ladle into the pot and swallowed a mouthful of the steaming liquid.

"Soup, you blasted fools; do you call that soup?"

"No sir, Colonel, that's just some dish-water we were carrying out."

The Prince Of Peace

WHEN the angels announced to the shepherds at Bethlehem that God had become Man, they proclaimed "peace on earth to men of goodwill." Yet, nearly two thousand years later, that promised peace seems further away than ever. Millions of the human race groan in bondage to a brutal tyranny. We have just seen the Hungarian people rise in desperation, only to be smashed back again into slavery after a few days of freedom. The other unfortunate nations who suffer the same captivity, are longing for the day when they may once again be free to worship God and rule themselves in peace.

Over all there hangs the cloud of fear. Chemists and physicists have explored the secrets of matter and energy, and their discoveries have been harnessed by technologists to machines which are capable of destroying the whole human race. A dreadful war seems near, peace far away.

Yet peace is near, if men would only understand that among them is the Prince of Peace. They have tried the council chamber, and treaties and guarantees, but they have not yet discovered the secret of "that peace which the world

cannot give." When they return to the justice and charity and truth of Christ, then they will have peace.

Here lies the significance of the Institute at Kevin Street. Our Irish students come here to learn Science and Technology. Such knowledge is a dangerous weapon, but at Kevin Street it is given by men who adhere unreservedly to the principles of Christ, and are devoted to the service of their fellow-men. On completing the course, our students will go out equipped with knowledge, and also with a philosophy that will enable them to use that knowledge for the benefit of mankind. For they will know that it is only in Christ and through Christ that Science can be used to bring peace into this world.

To all in the Institute, teachers, students and administrators, we wish every Grace and Blessing at Christmas and always.

May Our Blessed Lady and Her Divine Son grant you and your families, now and always, peace.

LAURENCE KEARNS, S.J.,

PATRICK CUMMINS, S.J.,

Spiritual Directors.

The Holidays Are Over — The Scholars Troop Back — It Is Time For

The Return

THE sun's last rays were peeping over the large brick building. They lent a grandiose air to the neighbourhood, and unless one looked too closely, the dirt and grime were inconspicuous. Small groups had formed outside the formidable railings and occasionally the muted conversations became loud laughter and jovial chiding. New recruits were painfully obvious, looking uncomfortable and unable to stand still and relax. Eventually the gates opened and the surge began.

The inside was much the same as last year. "Smoking Prohibited" and time-tables were in evidence, though scant attention was paid to the former on the first night. Once again the groups started forming and breaking and then reforming. Old friends jostled good humouredly with the teachers, and shot forth their questions, aired their doubts; cards were

completed to the scratching of long-idle pens and money was produced to the accompaniment of half-witted remarks about family responsibilities. It was handed over the counter in exchange for class cards in the Principal's room.

We met outside and waited until the yester-year group was complete. Then we proceeded to the traffic lights and stood a while. This was a parting of ways. Some went along towards the Green; some went up Camden Street. The roars of the hotted-up motor bikes were rending the air, as would-be dare-devils sped homewards. Left alone the three of us walked down George's Street. Now the air was still, the Celtic twilight created shades and shadows, so we hurried along to the Coffee Room to lose ourselves in the friendly chatter and smoke.

T. P. Ryan (R.E.I. Night)

"There was something more spooky than the teachers amongst us." Read what happened the day there were

Spooks In School

Kieran ("Mr Mulliner") Cusack.
Pre University

"**POLTERGEISTS,**" said the eloquent gentleman from Senior Science, "or something of an equally metaphysical nature have, without a doubt, made their abode within the hallowed walls of our illustrious institute."

While delivering this masterly passage of rhetorical premiss, the worthy gentleman was standing with his back against the counter of a small, but well patronised, milk bar (at least we'll call it a milk bar), situated not far from the gates of his alma mater. His audience consisted of fellow students who had called in for their daily glass of, eh, milk.

Having left his audience gaping with his postulation, he continued, "Occasionally during my first months in our celebrated seat of culture," he paused momentarily in reverence, "some sixth sense warned me that there was something more spooky than the teachers at large amongst us. This premonition caused no great concern, but happenings of late demand that we now review the position with profound gravity." He paused here to have his audience's and his own glass refilled with the beautiful brown—I mean white liquid (a short interval followed while the liquid, mindful of the law of gravity, flowed downwards).

"Let me narrate for you the circumstances which lead to my final decision on this matter," said he, hiccupping courteously. "It was last Monday that the disturbing event occurred. On that fateful morning two separate experiments were being conducted by two separate classes in two separate laboratories on the top floor," very explicit indeed. "In one lab, the Pre-University class was conducting an experiment which involved the production of hydrogen by using zinc and sulphuric acid. In another lab the senior science lads, that's us (here all bowed heads in respect), were conducting another experiment, the nature of which is irrelevant except to remark that we were using that intricate piece of mechanism—the wash bottle. By some extraordinary coincidence just before the

break, one of the people in the pre-University discovered that his volume of sulphuric acid had diminished to a minus quantity, while one of our own illustrious classmates, having gallantly deposited some H_2O down his companion's back, ran out of distilled water for his wash bottle. The two scholars presented themselves to the same preparation room and asked two attendants to deliver their requisites to the labs in about ten minutes".

He halted to restore his dissipated energies. The restorative had the desired effect and he swayed slightly, clutching at the bar rail . . . eh sorry, the counter! He collected himself, and another pint. He resumed. "The attendants being unoccupied at the time, went immediately and put the two required liquids in two similar beakers, and then discovered that they had ten minutes to spare. Putting the two beakers down on the same table they then proceeded to smoke, or play draughts, or marbles, or whatever lab attendants do during ten spare minutes.

"At the appointed time they both went and delivered their cargoes to their respective destinations. In the laboratories, the liquids were put to immediate use; the pre-Uni. gentleman depositing his on top of the zinc, while our lad emptied his into his wash bottle." He paused meaningly, looking at his empty glass. It was hurriedly refilled with a pint of . . . milk of course! The narrative was again temporarily suspended. His thirst quenched, he proceeded briskly, his nose now a delicate shade of pink. "The first man failed to excite a reaction from the zinc, while the sides of the second man's wash bottle proceeded to cave in gently. Obviously a serious error had been made. Somebody or something (thus assuring that it was something higher in the animal kingdom than a master) had changed the liquids in the beakers!

"Having agreed on this point, the two gentlemen concerned joined forces and proceeded to the preparation room to seek retribution on the perpetrators of

(Continued on page 19)

The E.S.B. Apprenticeship Scheme

Muiris Mac Ionraic, B.Inn.

THE present apprenticeship training scheme of the Electricity Supply Board was inaugurated in 1937. The indenturing of apprentices was not at that time widely practiced in Ireland. Boys were frequently taken on by employers on terms which amounted to a gentleman's agreement. Even the title "apprentice" was not universally used, the terms "boy," "helper," "assistant" and even, in a special connection, "nipper" being applied to junior manual workers, most of whom could claim that they understood that they were being trained in a particular trade. Some of these terms had crept into use in the Electricity Supply Board by 1937. They naturally led to misunderstandings, misinterpretations and disappointments. Recognising the desirability to clear up the wooliness of such a situation, the Board decided

- (1) to set up a regular electrical apprenticeship scheme;
- (2) apart from messengers, to employ no "boy" other than as an apprentice;
- (3) to assimilate into its apprenticeship scheme as many as possible of those already in its employment under such headings as "boy," "helper" or "unindentured apprentice." (Those so assimilated entered the scheme at various stages of advancement in accordance with their experience and technical training).

The Board realised the need for combination of manual and technical instruction in the training of apprentices. It was aware that while an employer might be able to provide excellent manual training, the technical side of an apprentice's training was often haphazard and dependent on his own voluntary attendance at evening classes for pursuance of a correspondence course with the disadvantages of cost and lack of personal direction. Evening classes of a suitable nature, however, were available only in a few centres whilst the Board's apprentices were employed all over the country. Moreover, an apprentice's work for the Board might necessitate being away from his technical school centre on a number of nights or even for prolonged periods. The Board, therefore, took the step, unprecedented in Ireland, of relieving its apprentices of their ordinary daily

duties for three months annually and bringing them to one centre where comprehensive technical courses could be pursued. This ensured that they would all get adequate technical training no matter where or how they were situated. The centre chosen was Dublin and the particular location Kevin Street Technical Institute. The co-operation of the Department of Education, of the City of Dublin Vocational Committee and of the staff of Kevin Street Technical Institute was given wholeheartedly to this arrangement. The various Vocational Educational Committees throughout the country have also co-operated by contributing a grant, each term of the course, in respect of each apprentice who had formerly been a student of their schools. The Trade Unions must be added to this list of co-operators: they have continuously supported its progress on the technical side and, of course, it is their members employed in the E.S.B. who provide the daily manual training which, combined with his technical training, give the apprentice full scope for attaining a high stage of craftsmanship.

Recruitment to the Board's apprenticeship scheme is based on recommendations submitted by the Vocational Education Committees or technical school authorities and by the Trade Unions. These recommendations are sought by the Board in summer each year, and every endeavour is made to have interviews and selections completed in time to start apprenticeship in October. For some years after 1937, candidates had to pass an examination set by the Board. Later, with the inauguration of the Manual

Group Certificate examination of the Department of Education, certain specified subjects of this were substituted for the Board's test. To be eligible for interview, a recommended candidate must now pass in the essential subjects of the Manual Group Certificate examination and also in two of the subsidiary subjects, viz., Mathematics and English. It is, therefore, a prerequisite of recommendation for apprenticeship that a boy should have attended a technical or vocational school for one or two years (depending on his standard of education) and have sat for the examinations indicated above.

Each of the Board's districts (about a dozen) into which the country is divided, has a headquarters town and the training of apprentices, at least in the early stages, has usually to be carried on there. Apprentices in any district must, therefore, reside in or close to their district headquarters town. Applicants sometimes live a considerable distance from the headquarters town and in such cases parents have to consider whether they can afford to support their boy away from home for two or three years, that is until apprenticeship wages are sufficient to pay for board and lodging.

The first six months of apprenticeship is a period of probation. The first three months is spent in practical training under the direction of the district office staff and the second three months is spent at the first year technical course in Dublin. At the end of six months a decision is taken on each probationer apprentice as whether he will be retained or released. Each apprentice retained is then fully in-

The present E.S.B. second year apprentice group who have just completed a three months course in the Institute.



[By courtesy of Mr. L. Ward

Continued

dentured for a period of five years from the date of recruitment. Technical courses follow for the second, third and fourth years and in the fifth year an endeavour is made to give each satisfactory apprentice a special course of practical interest or value.

Sessional examinations are set at the end of each annual course, and at the end of the second and fourth years the Department of Education sets supplementary examinations for Senior and Junior Trade Certificates respectively. Each apprentice, when he returns to his district after a three months course, continues his technical studies by means of a correspondence course based on his work in the technical school. This course is organised and run conjunctively by the Board and the technical school staff in Dublin. Examination and correspondence course results are analysed for each apprentice and reports are sent to the apprentices, to his father (or guardian) and his District Engineer so that all those concerned with his training are kept aware of his technical development and progress. The Board allows bonus to satisfactory apprentices in respect of the Junior and Senior Grade Certificates and certain technological examinations. An apprentice may in his final year be awarded as much as £1 per week examination bonus.

In recent years the Board has extended its scheme to incorporate mechanical apprentices for training as fitters. In their case the manual training is provided in the Board's Generating Stations and the technical courses in Bolton Street Technical Institute. Communications apprentices are also recruited but in such small numbers that it is not possible to arrange for special technical courses as for the mechanical and electrical groups; in other respects their training follows the pattern of that of the other apprentices.

Progress of experience in practical work is analysed and recorded at regular intervals at Head Office in Dublin from each apprentice's daily timesheets. By this means, and with the co-operation of the staffs of the Districts Offices and Generating Stations, it can be ensured that every boy gets a comprehensive training in the different aspects of his trade.

Bringing apprentices from their homes and districts to reside in Dublin for the duration of their technical courses involves the provision of suitable accommodation. As many as fifty or sixty boys may have to be taken care of in this way. All the arrangements for their stay in Dublin are made by the Board; in general, houses are selected where the only boarders are the apprentices themselves. These houses are inspected periodically during the courses by an officer of the Board to ensure that the ap-

Fr. Cox addresses students on his recent visit. Seated from left are: M. O. Gleason, M.A., C.E.O.; Mr. L. Trundle, Mr. Henderson, B.E.; Rev. L. Kearns, S.J.



[By courtesy of Mr. L. Ward]

Message From Fr. Cox

Dear Editor,

I recently had the pleasure of renewing old 'Tech' acquaintances when I returned to Kevin Street to say goodbye to some of my former teachers, and to my successors in the E.S.B. course, before going to my mission in Kenya, East Africa. The only students I met were the E.S.B. apprentice group and some of the part-time day pupils. It struck me while I was with them, that many of them, like myself, would most likely take up their life's work outside Ireland. Like myself, they have the privilege of bringing the Faith with them. In some respects they have a better chance of being advocates of the Faith to non-Catholics because non-Catholics tend to fight shy of the priest. If only every Irish Catholic going abroad were to hold on to the Faith — even without trying positively to convert others—they would be a great influence in the pagan atmosphere in which they fre-

quently find themselves. Some of the sadness would be removed from their involuntary exile when they realised that they were the instruments of Divine Providence for the conversion of their neighbour. I am one of the few Technical School students called to the priesthood, but I am one of the many that have had to leave Ireland for their life's work. I take this opportunity of asking you, my fellow 'Tech' students, and my fellow exiles to help me in the forwarding of the Kingdom of God on earth—by your prayers for God's blessing on my work, and by the assistance of your example to those with whom you come in contact. Once again I thank all those whom I knew in the Technical Schools for their good wishes and encouragement. I pray that God may bless you all and that some day we may be reunited in the bliss of heaven.

NOEL COX, C.S.Sp.

prentices are properly looked after and have adequate facilities for studying. The cost of travelling and residing in Dublin, as well as fees for attendance and provision of textbooks, is undertaken by the Board without any deduction from the apprentice's wages.

During the courses in Dublin, apprentices are given lectures by Head Office staff on subjects associated with development in their trade and graduation to citizenship

and its responsibilities. Arrangements are also made for them to attend weekly talks by the Chaplain to the technical schools and to attend an enclosed retreat during each of their courses in Dublin.

The scheme, then, as may be seen from the short survey given here, is a co-ordination of all the forces, manual, mental and moral, governing the development of the apprentice during his five years of preparation for full craftsmanship.

A TALL TALE

By Ambrose McKiernan, Radio Service 11

IT was one of those nights that provide the setting for many an eerie tale. The cold wind whistled through bare trees, their tall black silhouettes standing out like forbidding giants in the brief intervals of moonlight. The damp air was heavy and filled with weird sounds of creaking branches and mysterious rustlings. Old Pat Nolan pulled the collar of his coat around his ears and muttered to himself. His mind filled with questioning thoughts that made him uneasy. He quickened his pace slightly and almost stumbled along the rough road.

At the little wicket gate he tried to convince himself that a man of his age and experience was not so easily frightened—he was not afraid! But still he could not explain the beads of sweat on his brow. He was counting the blessings of that last pint when suddenly he saw a gleam of light under his cottage door. A strange feeling came over him as if that last pint was voicing its protest. He was too stunned to do anything except make his way to the door. Suddenly a loud clear voice cleaved the air, like a church bell on a still evening, "my hour is almost come, when I to sulphurous and tormenting flames, must render up myself." Stupified, Pat peered into the kitchen, and then he wished he hadn't. As if hypnotised, he gazed open-mouthed with bulging eyes. The beads of perspiration on his brow multiplied, dislodged, and trickled down his face, his breath came in short painful gasps. There in the cottage was a tall ghostly figure, transparent, as if it had been woven out of cob-webs.

Pat's stare went through the creature. There was this horrible "grey mist of a man" (as Pat described him afterwards)

"and him spoutin' strange and quare words."

After moments of utter terror and astonishment, the ghost (for a real live ghost, it was, or to be more correct, a real dead one) spoke, "I say, old boy," he drawled, "there's a devil of a draught. Step in and close the door, will you?" Terrified, Pat obeyed. "I hope you don't mind, old chap," the ghost continued, "but actually I'm playing Hamlet next week at the manor, and it's so crowded there that one simply can't get a quiet corner to rehearse. This sort of thing requires concentration, you know! and that's why I decided to drop in here, it's so quiet! But I'm afraid I'll have to disappear soon."

Pat turned green, then white, then green again, like a traffic indicator, as the ghost resumed his gesticulation and read his part aloud. Still Pat stood transfixed, swallowing hard. He tried to speak but only succeeded in producing a hoarse croak. Then the monologue stopped and the ghost solicitously pulled a bottle out of nowhere, saying "you look like a ghost, old boy, have a drop of this." Before Pat knew where he was, a long icy hand was holding the bottle to his lips and a strange potent liquor was flowing smoothly down his throat. He gulped and swallowed and thought, "almost as good as Guinness," and then, sheer oblivion.

Pat sat back comfortably, tilting his chair against the wall. His audience in the village pub gazed silently into their pints and then at Pat, unable to decipher the twinkle in his eye, "Well that's me story," he said, standing up laboriously, "sure maybe he'll be there again to-night, God willin'. Dia libh" and with that he strolled out into the darkness.



"WELL! WHO ELSE HAS SAID IN HIS SHOES?"

IT WAS NOON ON EASTER MONDAY, 24th APRIL, 1916. A MAN CAME OUT OF DUBLIN'S GENERAL POST OFFICE AND WALKED OVER TO NELSON PILLAR WHERE HE READ A PROCLAMATION ADDRESSED TO THE PEOPLE OF IRELAND. THERE WERE VERY FEW IN SACKVILLE STREET AT THAT TIME AND THE RESPONSE FROM THOSE FEW WAS UNENTHUSIASTIC IN THE EXTREME, ALTHOUGH THEY WERE LISTENING TO WHAT WAS PROBABLY THE GREATEST DOCUMENT IN THE HISTORY OF IRELAND. FOR THE MAN WAS P. H. PEARSE, AND THE DOCUMENT WAS THE PROCLAMATION OF THE REPUBLIC.

Shortly before that the Volunteers and Citizen Army had taken command of that now famous building and unceremoniously ushered out all the clerks and customers, on the premises. Pearse ordered one of his officers to take a party to the upper storeys to overcome the guard. Meanwhile another section of the rebels proceeded through the building, taking possession of the sorting rooms, parcel rooms, telegraph and telephones.

was also captured and news of the Rebellion, together with the text of the Proclamation, was sent out and relayed to the world by the ships at sea with the result the news was known in New York before the majority of the people in Ireland heard about it. The Imperial Hotel and many other houses were also taken by the rebels thus putting them in complete command of the centre of the city.

At one o'clock on Monday a company

G. P. O.

The staff in these departments surrendered at once and the telegraph cables to England and Scotland were cut at 12.20 p.m. James Connolly ordered all windows to be smashed and fortified with chairs, stools, mail bags and many other such materials. Meanwhile, throughout Dublin, similar events were taking place and most of the major buildings in the Metropolis were in insurgent hands. A Provisional Government was set up in Dublin to administer the affairs of the newly proclaimed Republic and Pádraig Pearse was named as its President. The Rising had begun!

While the G.P.O. was being taken, sections of the Volunteers began to occupy other positions in Sackville Street. The Ship Hotel at the corner of Abbey Street was captured and a very formidable barricade was erected opposite Wynn's Hotel with reels of paper taken from the stores of the "Irish Times," and bicycles, motor-cycles and boxes taken from a nearby cycle shop. Shops on both sides of O'Connell Bridge were occupied and premises on the four corners of Abbey Street were captured and strongly garrisoned. A tramcar, captured by the Volunteers shortly before the transport authorities ordered all its vehicles back to base at one o'clock, was used to fortify a barricade erected in North Earl Street. The Irish School of Wireless Telegraphy

of Lancers entered Sackville Street and after four of their number were killed, they retreated in disorder to the Parnell Monument. This was the only British force in strength to enter the street until the Rising was over. Meanwhile, inside the G.P.O. barricades and windows were being strengthened and there were many casualties among the Volunteers from broken glass. Looters set to work in Sackville Street and many of them were badly hurt by the broken glass although this failed to discourage them. The Volunteers thereupon poured buckets of water over them and the men inside the G.P.O. fired shots over their heads. Some small boys and girls raided a toy shop and made off with teddy bears, toy rifles, at the same time exploding fireworks. Shortly afterwards, a fire broke out in this shop and the brigade arrived and extinguished it, but not before a large portion of the building had been gutted, thus creating a gap which was eventually to act as a check to the further progress of the great fires which occurred later that week.

On Tuesday, the Provisional Government issued its first communique, informing the people of Ireland of the events of the previous day. It was printed in a small four page newspaper called "Irish War News" which was published by the Volunteers. The leading article entitled

"If the Germans came to England" occupied the whole front page of this paper which also gave the names of those appointed to the Provisional Government. They were as follows: Thomas J. Clarke, Sean MacDiarmada, P. H. Pearse, James Connolly, Thomas MacDonagh, Eamonn Ceannt and Joseph Plunkett. At eight o'clock on Wednesday morning the Admiralty steamer, Helga, came up the Liffey and commenced bombarding Liberty Hall completely unaware that it was unoccupied since the commencement of the Rising, although the pro-British elements in Ireland afterwards intimated that the garrison escaped during the night.

Trinity College opened its grounds to the forces of the Crown and field-guns placed there, together with the guns from the Helga, bombarded the G.P.O.

1916

and its surrounding buildings. It was from Trinity that the insurgents met with most resistance during the early part of the week because any attempt to cross the thoroughfare met with machine gun fire from the College buildings. Machine gunners were also on the roofs of the Custom House, the Tivoli Theatre and Tara Street Fire Station. On Wednesday, also, the most heroic battle of 1916 took place. It was the "Battle of Mount Street Bridge" and in the course of the fighting the British Army suffered 234 casualties whereas the Irish had only six.

On Wednesday night and on Thursday the fires in Sackville Street worsened, and all the buildings from Abbey Street to North Earl Street were ablaze. It was thought the enemy were trying to burn out the insurgents and consequently most of the buildings surrounding the G.P.O. had to be evacuated. The Imperial Hotel was ruined as was the Hotel Metropole, the Ship Hotel, Clerys and scores of other houses. It was afterwards estimated that the value of the buildings and stocks destroyed by the fires during the Rebellion was £2,500,000. The men who garrisoned these outposts immediately made for the G.P.O. but many were killed in the attempt.

Inside the headquarters, half of the main hall was made into a hospital, while the sorting tables were used as bunks. A kit stall was also set up where almost any-

thing could be obtained and in a secluded corner a priest heard confessions. Outside, the bombardment continued. Shortly after three o'clock on Thursday, the flagstaff on the top of the general fortress was knocked down by the English guns. A little later part of the roof was carried away. As James Connolly went into the street to dispatch a squad to Abbey Street he was almost immediately shot in the leg by a sniper. He was too far away from the G.P.O. to be seen and had to crawl back and was carried inside. Dr. James Ryan dressed his wounds and Dr. O'Mahony, R.A.M.C., performed an operation immediately. Connolly, however, continued to direct matters from a stretcher, and in a manifesto issued next day, Pearse referred to him as "the guiding brain of our resistance." Com-

munications between the headquarters and the other buildings throughout the city were cut on Thursday morning when the invaders surrounded the centre of the city.

On Friday, the G.P.O. fell victim to the great fires which raged in the street. There was great danger of the magazine in the basement blowing up, so twenty volunteers were asked to carry it out to the back. They worked in the dark, where the slightest slip would have resulted in the whole building going up, but miraculously the trip to the back was uneventful. It was then decided to evacuate the G.P.O. and take William and Woods' factory in Parnell Street; accordingly fifty men under The O'Rahilly left H.Q. at seven o'clock. They were to act as the advance guard but they had got no further than Moore Street when the enemy opened up on them and The O'Rahilly and many others were killed. The others dashed for the cover of the Moore Street houses where it was decided that nothing could be done until next day.

All through Friday night and Saturday morning the Volunteers tunnelled under Moore Street towards Parnell Street, but when they eventually came out into the open they found the British barricade blocking their way. They were ordered to retire and wait until nightfall before

(Continued on page 15)

Standing Room Only!

Miceal MacGrienna, E.S.B. 2nd year

MANY students, optimistic about exam results, are already thinking about next summer's vacation. To that small number who will be forced by economic circumstances to consider "conducting" in England, I dedicate these few lines.

You will be required to present yourself at the recruiting centre for an exam. in English and Maths. Do not be too dismayed when you are asked to produce an "essay" in fifty words describing your "motives and qualifications for the position you intend to occupy." In the spelling test mark "antidisestablishmentarianism" is wrong, even though it may be right. Having read through your Eng. while you did the maths., the examiner is bound to comment "So you're after the lolly, eh?" "Yes" is the easiest answer.

When instructed to go to the medic. dept. do not follow the arrows. They may misguide you. The doc. will make you put your feet together, your hands by your sides and close your eyes suddenly. If you sway, you are out; so be nearly sober that morning! You are now fit for work. You are issued with your uniform and will probably look like a Teddy Boy in his first jacket! Sling it back, but take any cap at all—you will never wear one!

You are expected to be in "school" the first morning at 7.30. Make sure you arrive after 10 o'clock, and blame the local transport when you arrive. You will thus obtain a low rating and finally be sent to an easy depot. Cog all work from your neighbours, but don't let them cog any of yours. If your name is Sean, put your initial "S" and "J" alternately. You can then claim that they have anglicised your name. This matter will require many afternoons investigation and they will probably give up in despair. From now on you will be addressed as "Mr" by the instructors and will be held in awe by the lesser breeds from Bolton Street, Rathmines, etc.

The next four days are spent "on the road." Refuse absolutely to sell any tickets for your instructor. You can then have a very enjoyable time, standing on the platform and ringing the bell now and then to create a good impression.

When you finally go out on your own, your mates will give you every encouragement, and your driver will hand you the

Golden Rule: "Keep the damn thing moving." Keep your watch 3 minutes fast always, for it is essential that the driver should believe your watch to be right and Big Ben wrong. This also means that you will always be on the tail of at least one other bus.

You may find it a little difficult to crawl forth at 3.30 a.m. If this is so, buy a high pitched alarm clock. A louder lower pitched one will merely intensify your slumbers. The original model should be effective for a little over a week. Place it in an empty tin can the following week. The week after that, place the tin on a cracked plate. In about three weeks time the clock, now in the dust bin, will awaken you and the neighbours.

Don't wash or shave until you have half your day's work completed -- you sleep better that way. During rush hours shove in as many as you can and then put up the "Bus Full" sign. Stand on toes, kick shins and roar "hold tight" occasionally. Ignore inspectors completely. The Union considers them redundant. It is most amusing to watch them attempting to decipher the mysterious caligraphy on your way bill.

If there happens to be an important football match, there is no alternative but to develop a headache and forecast thunder. It will come in the form of C.D.I. (Chief Depot Inspector). You interview him three times every week in connection with reports from passengers. These reports usually begin in the most legal manner ("On the 23rd inst., an altercation took place on route 13 . . .") and end with many common expletives ("He was damned saucy"). Assure the inspector that there is no truth at all in any of these epistles. When he comments on the fact that you have not shaved, just tell him there is no future in the job.

Do not join in with the drunks who sing "Nellie Dean" on Saturday night. Tell them they "have'nt the foggiest" how to get drunk. They will then roll their heads disconsolately, look at each other with mournful eyes and stop singing. Never shirk little rows. They are the spice of a conductor's life. Stand as far as possible from your opponent and shout at him in stentorian tones. A sudden stop will quieten most of the aggressors.

When you reach the stage where stairs seem eternal and troublesome passengers get on at every stop, it is time to quit. The best thing to do is take a nice quiet week down in "Sathend."

Famous Kilkenny full-back, John Maher, who is a night student, here describes his greatest hurling thrill.

A Game I'll Never Forget

THERE are games I like to recall and of them all, I regard our most recent game with Wexford as the most thrilling in which I have ever played. In our three previous meetings in 1956—the Leinster final, Walsh Cup and Oireachtas Cup — Wexford had narrowly beaten us, and now all Kilkenny cried out for victory. Wexford were All-Ireland champions for the second successive year and were unbeaten for eighteen months. We were travelling to their home ground in New Ross for a vital League match in which defeat for either side would virtually end hopes of a trip to America.

When we reached the ground it was packed to capacity and excitement was feverish. In the dressing room no one spoke much, except for an occasional joke by some of the lads to ease the tension. We all felt it was now or never and we were grimly determined as we walked out onto the field, led by our captain, Johnny McGovern.

At last the game was on! As in previous matches we set the pace with wing half-backs Paddy Buggy and Johnny McGovern playing brilliantly and at midfield Bill Walsh, the "daddy" of us all, again inspiring the team as he had done against

Cork. Our half-forwards Donal Heaslip—a mere stripling beside his towering opponent, Jim Morrissey—Mick Kenny and Mick Walsh, were proving too neat and nimble for Wexford's great half-back line and in the full line Dick Rackett, Willie Dwyer and Sean Clohessy were giving the Wexford goalie, Art Foley, a testing time. Art, however, was in top form and fifteen minutes had gone before Dwyer beat him for a great goal, to leave us leading 1-3 to 1 pt.

It was now that the powerful Wexford men came into their own and with Ned Wheeler particularly in great form, they piled on the pressure. We defended with all we knew. Jim Walsh never gave Nick Rackard an inch; his brother, Tom, on his right kept Tim Flood in a quiet mood, while on his left I was battling it out with Tom Ryan. Behind us in goal Olly Walsh was his own daring self. However, a few minutes from half-time we conceded a close-in free and Big Nicky, as he has done so often before, crashed it to the net. Martin Codd added a point almost immediately and just on half-time Heaslip scored a beauty of a point for us, leaving the half-time score: Kilkenny 1-4, Wexford 1-2.

The second half began just like the

Star Kilkenny full-back, John Maher, evades the attention of the Wexford forwards in the Leinster Hurling Final at Croke Park. On right is Nicky Rackard who figured so prominently above.

[Courtesy of
"Irish Independent"]



first, and with centre-half back John Sutton and centrefield man Mick Brophy now striking their true form we had a slight edge all around and led 1-6 to 1-2 with fifteen minutes to go. However, Wexford were not champions for nothing, and back they came with a vengeance. From a 21 yards free Nicky again drove to the net. A minute later Seamus Hearne sent over the bar to level the scoring and now "the fat was rightly in the fire."

Wexford, noted as strong finishers, looked like getting on top, but we were far from finished. The hurling was fast and fiery with no quarter being given as points came from Sean Clohessy, Padge Kehoe, Mick Kenny and Tim Flood — a really wonderful effort — in that order, to leave the score still level. Then Kenny scored a grand point from fifty yards and Rackett raced through for another to give us a two points lead with five minutes to go.

That last five minutes were too hectic to remember the details. The whole Wexford team swept down the field in an all-out bid to save the day and we fought tooth and nail to hold out. I can remember Olly Walsh clearing balls off the goal line, John Sutton reaching "into the clouds" for balls and pegging them back upfield, Bill Walsh beating at least four men on one great run and Johnny McGovern always popping up where danger threatened most. Then, just as it seemed we would hold out, came another 21 yards free. Nicky had already shot two frees to the net, so why not a third? Were they going to rob us at the last minute? We packed the goal and a hush came over the field as he went to take the free. He shot for a goal with all the power he knew behind it, but his shot was blocked down, and, as the forwards raced in, Paddy

G.P.O.—(Continued from page 11)

attacking. It was then the leaders decided to surrender.

Elizabeth O'Farrell was chosen to bring a message to the nearest British post and inform them that Pearse wished to discuss terms of surrender with the Commander of the British forces in Ireland. She was told that they would accept nothing except unconditional surrender. At 3.45 p.m. on Saturday, April 28th, 1916, Padraig Pearse agreed to their demands and ordered all Volunteers in the city and country to lay down their arms. The document was countersigned by James Connolly who agreed to the conditions for the men under his command only, and by Thomas MacDonagh, who agreed after consultation with Commandant Eamon Ceannt and other officers. Pearse made it quite clear that he only surrendered to prevent the further slaughter of Dublin citizens and in the hope of saving the lives of his followers (as early as Wednesday he expressed the opinion that he himself would be either killed or executed).

With the surrender, the most glorious week in the history of Dublin came to an end. The Irish Republican Army had for six days held out against the might of the British Empire. They suffered many losses in so doing, but in the words of Padraig Pearse, "they redeemed Dublin from its many shames, and made its name splendid among the names of cities."

Padraig Bennett.

B.Sc. II. Night.

Buggy cleared upfield and the final whistle blew leaving us victors by 1-10 to 2-5. That whistle, the sweetest I have ever heard, brought to an end a game I will always cherish in my memory.

WRITING RIGHT

Write, we know, is written right,
When we see it written rite,
But when we see it written wright,
We know it isn't written wright,
For write, to have it written right,
Must not be written right or wright,
Nor should it be written rite,
But only write, for then it's right.

Once upon a time there were two Chinamen—look how many there are now.

An Englishman believes he is self created—and adores his creator.

A Scotsman prays on his knees for one day of the week, and on his friends for the rest of it.

BOMBS AND SUPER BOMBS

M. O. G., B.Sc. II.

THE date 11th of July, 1945, will ring no bell with the majority of readers but it may yet emerge as a turning point in the history of the world. The venue for the (literally) earth shaking event which took place on that day eleven years ago was Lat. 32.45 N. and Long. 105.55 W., a desolate place called Alamogordo in the desert of New Mexico 80 miles east of the Rio Grande. It was here that the roar of the world's first atomic bomb ushered in our uneasy nuclear age.

Not many weeks later at 8.15 on the morning of 6th August an American B.29 dropped a single atomic bomb over the Japanese city of Hiroshima. A few seconds of unparalleled slaughter, in which 80,000 people lost their lives, revealed the true horror of the new weapon. Three days later about 40,000 people were killed when a second bomb was dropped on Nagasaki.

Let us now for a moment forget (as behoves the student of science and technology) the human suffering involved and the moral implications of such methods of waging war. Let us examine the effects of the bomb—and those of its more powerful successors—with the detachment which is somehow expected of the technical mind.

ENERGY RELEASES

When the nucleus of an atom of Uranium or Plutonium undergoes fission (an effect first achieved by Hahn and Strassman not long before the outbreak of World War II), there is a loss of mass which, according to Einstein's mass-energy equivalence, yields an energy of 6.7×10^{12} calories.

We are told that the bombs dropped on Japan contained about a Kilogram (2.2 lbs.) of fissile material—about 3×10^{24} atoms. The immediate energy release was therefore about 2×10^{13} calories or 8.4×10^{20} ergs. I call this the immediate release because it constitutes about 90% of the total energy of the bomb. The other 10% is released later in the decay of the radioactive fission products.

Let us express this tremendous energy in more familiar terms. 2×10^{13} calories is equivalent to 2.3×10^7 Kilowatt hours.

It is the energy yielded by the combustion of 7,000 tons of coal or by the explosion of 20,000 tons of T.N.T. This latter figure explains why the Hiroshima bomb is sometimes referred to as a 20 Kiloton bomb, but it is more commonly called the Nominal Bomb.

For those who feel that the above figures spell unprecedented violence, it is instructive to note that a major earthquake can release energy of the order 10^{26} ergs. — more powerful than 100,000 Atomic Bombs.

EFFECTS:

Most of the energy of the reaction (83%) is transferred to kinetic energy in the fission products and appears as light heat, sound and blast waves. About 6 or 7% of the total energy goes in immediate nuclear radiations, the remainder takes the form of radioactivity in the products of fission.

Effects of the nominal bomb might be summarised as follows:—

Blast: Houses completely demolished $\frac{1}{2}$ mile from the bomb. Light damage up to 3 miles.

Heat: Total heat released 7×10^{12} calories. Serious fires started by radiated heat out to 2 miles.

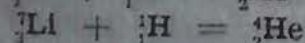
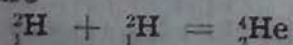
Radioactivity: Immediate danger—50% chance of survival at $\frac{1}{4}$ mile. Delayed danger (fall-out of fission products) no serious hazard.

THE "H" BOMB

A loss of mass occurs as we have seen in the fission of the nuclei of certain heavy atoms. A much greater loss of mass, and consequently a greater energy release, results from the fusion of the nuclei of light atoms.

This is the principle of the hydrogen bomb, so called because the most suitable reactions involve the atoms of the isotopes of Hydrogen—deuterium and tritium.

For the technically minded (as the motor car advertisements say) possible reactions are



Before the above reactions can take place the repulsive force between the

positively charged nuclei must be overcome. In the bomb this is achieved by heating. A temperature of over one million degrees Centigrade is required and it is in order to provide this temperature that a fission bomb is used as a "detonator."

Theoretically there is no upper limit to the power of these fusion or thermonuclear bombs, but practical considerations — weight, volume, etc., may limit their use as weapons of war. It is claimed, however, that 20 megaton bombs have been exploded (=20 millions tons T.N.T. equivalent=1,000 times nominal size).

Fortunately, as any student of Physics can tell us, such a bomb would not give radii of destruction 1,000 times those of the nominal bomb. The linear scaling factor for blast damage is

$$\left(\frac{\text{H Bomb Energy}}{\text{Nominal energy}} \right)^{\frac{1}{3}} \quad \text{In this case } \left(\frac{1,000}{1} \right)^{\frac{1}{3}} = 10$$

Thus the radius of total destruction by blast would be $\frac{1}{2} \times 10 = 5$ miles. Light damage would extend to 30 miles from

the bomb. The heat scaling factors depends largely on atmospheric conditions and height of burst, but in this case it would be something more than 10.

The scaling factor for immediate nuclear radiations is so much less than that for blast, that for "H" bombs in the Megaton range it ceases to be a significant hazard. Delayed danger from radioactive fall-out is greatly increased and is a new and terrible threat. Serious contamination could cover an area about 200 miles x 40 miles downwind of the explosion.

This in a nutshell is "THE BOMB" the terror of our time, the modern Sword of Damocles. With such a weapon in its hand mankind seems to pause. Faced with a threat to our survival will we now forever beat our swords into ploughshares and harness this new source of energy for peaceful uses — or is the dies irae approaching when the chains that bind the nuclei again be loosed in unthinkable destruction.

"Solvete saeculum in favilla."

We asked for articles describing the many aspects of Ireland at play and at prayer. Here we print the first of the best two received. The second is on page 28.

As I Saw It, LOUGH DERG

(Joseph M. Clarke)

LOUGH DERG, a picturesque lake in the heart of the Donegal Highlands, is studded with numerous islands. Station Island, the scene of the world famous pilgrimage, is one of the smallest. Here a basilica, a church and presbytery, two hostels and the boatmen's houses, surround the rocky beds, at which the "stations" are made.

On arrival in one of the large row boats (they hold 150 people), the pilgrim goes to the hostel where he is allotted a cubicle and removes his shoes and socks. He then proceeds to St. Patrick's Cross where, with outstretched arms, he renounces the world, the flesh and the devil. He begins by doing the first of the three "stations," each of which takes about an hour to complete. While saying the prescribed prayers, the pilgrim cautiously picks his steps among the sharp stones on the outside of the "stations." This he circumvents, and then goes around the inside, kneels in the centre, prays and wonders how he will get another two completed before dark.

The pilgrim then eats his first "meal"

since the previous midnight. It consists of black tea and dry toast or oaten bread. This is all he receives until eleven the following morning when he is again offered the same menu.

The first night is spent in the Basilica, a beautiful structure with the Stations of the Cross depicted on the stained glass windows. Four "stations" are performed around the interior of the church and are completed about 5 a.m. The rest of the second day is occupied by hearing Mass and performing religious exercises.

The pilgrim goes to bed at 9.30 that night, and is allowed to rest until 5.30 a.m. on the third and final day of the pilgrimage. On this morning two stations are performed and only then can the pilgrim don his shoes and walk without the fear of lacerating his feet. At 10 a.m. the boat arrives and the pilgrim departs, his spiritual life strengthened and intensified by three days of penance, fasting and mortification. He has eaten only three small meals on his pilgrimage and slept only eight hours. They say one always returns

Berni And The Car!

BERNI, who is my friend, decided that we must purchase a car. Many were the hours spent in auction rooms and Berni always seemed to develop a crick in his neck after them. I remember that he once nodded to a pretty girl and the auctioneer knocked down a 1922 Baby Austin to him for £90. Henceforth he decided to keep a steady head!

Eventually, however, we heard of a car going for £20. It was not one of this year's models, but rather a 1926 Morris Oxford, one of the bull-nosed types. Berni took one look at my nose, and said we'd buy it. After all it was only thirty years old, just five years older than mine. So now to make up the money, ten pounds each.

Berni went through his things and sold two old fishing rods; a bag of marbles; some old books; a yo-yo and various odds and ends.

I went through my things and sold two more of Berni's old fishing rods, his air-gun, his tennis racquet, and an old rain-coat he'd loaned me one day when his father wasn't wearing it. After a few days we had £17. 10s. and an old mangle which his mother is still wondering where she left.

And so at last we were to own a car. I thought that it might be a good idea if one of us learned to drive; it is an accomplishment which often comes in handy when you own a car. We bought a book called "How to Drive in six easy lessons." Having learned from it all there was to know on the subject, we realised it was a book on golf. Berni wanted there and then to sell the car and take up golf instead.

"Sure hadn't we paid three and six for the book and did we want to waste it now."

This rebellion I put down by changing the 3/6 to 3/6 and selling the book for four shillings. He was happy with the car again.

When the time for collecting the car arrived, I knew something about it. I could tell which wheel was the steering wheel, and which was the spare. The spare was the one on the inner front.

The inner front with the tyre removed. The inner front with the tyre removed. The inner front with the tyre removed. We were pleased that the seller's house was on top of a hill, as there would be less trouble in starting.

Climbing in and closing the door, Berni got out again and picked up the door off the road. He threw it in the back where it went through the floor boards. By the time he'd crawled under the car and come out again with the door, half the floor-boards, a piece of exhaust pipe and something which looked as if it belonged somewhere, the seller had disappeared indoors and hung up a notice which said:

"GO AWAY. I'M MURDERING THE WIFE."

I released the handbrake, and handing it to Berni, he placed it gently over his shoulder with the rest in the rear.

"Going smoothly," said he.

"What," I roared.

He wrote it on a piece of paper.

At the foot of the hill he stopped.

"What's wrong?" asked I.

"Sure you haven't started the engine yet."

"Don't be vulgar," I said as I tried the self-starter.

Dermot C. Clarke
(Air Class Dispatch)

"That's not the starter," said Berni, "that's the horn."

"Don't be silly, this rubber yoke is the horn," and I blew it only it didn't blow.

"You are right, it isn't the horn, its the nut holding the steering column."

"There is more than one nut holding it," said he, giving me a funny look.

By this time a crowd had gathered around, all offering advice. We ignored the advice of those who told us to ring our doctor and have our heads examined. Eventually an old man with the pride of an earlier motoring age shining in his eyes, told us to use the handle."

Berni proceeded to examine all the door handles wondering just what the old boy meant.

"No, no!" he said, "the starting handle, there on the floor."

"It's loose," said Berni, putting down his hand and grabbing it.

"Oh, dear," said the old one, "you must stick it in the front."

Berni got out and stuck it in the front under the nose. After a quarter of an hour he got back in again and stuck me

in the front under the nose.

"Isn't it your turn to do some work?" he asked.

"What do you mean, amn't I driving?"

However, I never mind people taking advantage of my good nature, so I got out and the engine started at the first twist. It seemed I had forgotten to switch on during Berni's quarter hour. He mentioned the matter to me.

We started off, she didn't seem to pull so well in the higher gear. Having pulled up, and put off 22 children and a short, sighted old lady who was rehearsing a complaint to C.I.E., we had no further trouble.

Arriving home, my mother opened the door and said: "Shouldn't the bins have been emptied this morning?"

"It's a car, mother."

"Well, I'm sure it will be all right when you have it built."

"But it is built."

She took another look and went upstairs to say the rosary.

Next day we brought Berni's father for

a drive. He seemed a little nervous but when we promised not to cross any canal bridges, we got him to take off his life-jacket.

We gave him a nice run out to Enniskerry, but I really think that he enjoyed the run home even better. He came back by bus.

We did have some mishaps. I remember the day I asked Berni to fill up the radiator with water.

"How do you know if it needs any," he asked.

"Look in and if you don't see any water, fill it up."

Two hours later he staggered in.

"Gosh, imagine that radiator taking six gallons of water," he cried. I cried too; that was the petrol tank.

Well we had our car. We had our fun and troubles. There comes a time in every young man's life when he wants to own a car. If any such youngsters would care to have a bullnosed Morris, we would be pleased. . . . Sorry, no advertising.

SPOOKS IN SCHOOL

(Continued from page 6)

this distardly deed. The assistants when confronted with the facts were astounded, and not without reason. Never in the history of their colourful careers had they been guilty of any negligence resulting in the spoiling of an experiment, much less two experiments on the same day. They explained that they had left the two beakers on a table for ten minutes, but were quite explicit on the point that no earthly agent could have had access to them without their knowledge.

"Contemplating these facts, my friends, and taking into consideration the additional fact that I, being the seventh son of a seventh son, should be the first to notice anything spooky in the atmosphere, I have arrived at the inevitable conclusion: our school is overrun with playful and mischievous spirits."

At this point one of the milk drinkers, who had followed the story from the start, spoke up "I think," he said, "that the obvious explanation is that the assistant lifted the wrong beakers and—"

"Quite, quite, quite my friend," cut in the story teller quickly. "I see your point, but it is apparent that you know

very little of the nature of our lab assistants. They have within them a type of instinct which enables them to find their own apparatus among the thousands of similar ones, as surely as a bird finds its nest or an animal its young, and so we are back to where we started. The prank could not have been accomplished without meta-physical aid. Poltergeists, my friend, Poltergeists."



DÉ réir cosúlachta ní cumptar an praeic ché tme sa clamsán easimireacé iomnaisiúnta sa neán-ointear muna mbeaó ná tásatós an don néiteacé síocáinta maidir le bainisteoireacé agus mianacáin Cándil Suez? Leanad de na comraici agus den mangaióet go ceann i bpaó agus bí síúil as usóime go mbuádpáó eiall agus scuam an claoil agus ár-acnias, ac, is trua an ceare gan neacht eadú eiar ué agus seo ainsí sinn as eairteam meabrac le nuacé cogair neic mbliana eareis an éimlis náir mhúil eiall no luét fangair agus mioscain.

Is eian ó eadéatá i ocosacé an Cándil Suez. Undagnalonn eio de na euntaisi staire a céile maidir leis na mianacáin eoisig a veánas leis an mheán-mum agus an Rua-muir a ceangal le eandil mair. Deirtean go raib eandil mteioita ann sa séú aois roim Chriost, gur plúctad as plúca i leis an amsin agus go raib sé imice ó eion go ceann i bpaó. Bí sí mteioita ainsí ó 642 A.D. go dtí 776 A.D. de réir na geuntas, agus leigeat don oraioib i seatead ac-uair.

C A N Á L

Nuair a táinig pás agus pordant an trédéat mair iom an Oir-áis agus an Iar-Foraip san 18ú agus san 19ú aois deimeat motaó go ngearrpá eandil fan eonam-naon na geúis toé iom Port Sair agus Suez, aistear céad míle sí, mar go noeapad an bealac uisce sin gionn mór an cuaracanna fannige agus go mbeat earrat go leor níos saoire uá barr san.

D'é fennuano de Lesseps, Franncacé, a eus te pios ná raib ean deitae croite de deipir iom aoinne an uisce sa mheán-muir agus sa Rua-muir, agus, mar sin, ná beat sé ró veacain an eandil a veanam mar ná beat don gá le buat-geatá, agus com mair leis an tase san an uisce, gur eé gaiméat eot-romáita a beat euiato na eandilac.

Nuair a bí gac réam-macénam veanta aige, eum sé a veantac os comam Kheive na n-Éigipte, ac, ní raib mian uó de Lesseps ac miltac. O'púil sé an an bfrancé gan plose gan ponn. Ní raib ann ac beagán bliain go bfuair Kheive san na n-Éigipte bás, agus nionb túisce pú eailp é, ná gur eus an Franncac a agair som leas scéim a eum i lámaid an rialatóra nus san Éigipt. Fuair sé ceat eul an agair agus a beagán a eadant i geric.

Bí veacáitac go leor sa tsá an eum aingeat o'púil. Ní eadapad tué gústan agus gnóta Sasana don eadaloet uó, ac eadapad boet agus saoir sa bfrancé leis, agus an an 25ú o'ábireán na bliain 1859, eumead eum an georac na eandilac as Port Sair. Eum Kheive na n-Éigipte 30,000 oiréi euge, ac bí ambeoin sin ní raib an tionscnam ag eum an agair go nó eapad i ocosacé.

I lár na veime eugad oiréi uó na hoimite Éigipteacá eul as an oiréi agus eum an tug an an tug an ué Lesseps agus an a eum mnealltóil.

Bí oiréi mull o'púil nuair ná raib pú oibre acú leis an saotar eáine a eadapad an tionscnam i geric a veanam, agus eum eontas eum oiréi uó barr, ac eadapad uá georac le ologuain agus le veom, agus buatad an lá leo an an lár lá de lónasa na bliain 1869. Cosain an oiréi go leim breis agus £16,000,000. Da mór an leat aingit an uair uó é.

Ní raib ac teiteat 200 eiois sa eandil i ocosacé a né agus noimeas de 26 eiois. Veimeat sé 48 uair a eiois de galeán aistear na eandilac a eum uí, agus ní raib sé ceacáite u'aoir báo a mbeat eamiac ean 20 eiois aici an eandil u'úsáio.

Sa bliain 1888 gaiméat eumnu de na náisiúin móra Compacá, agus eocraioó as an geumnu iomnaisiúnta san go mbeat ceat as gac eum an eandil u'úsáio pé na comiollacá eéatna in am cogair nó síocáina agus fannig sin ná veanfai eum-eosaint go neo uiréi.

Eumead feshas mór an an geandil mveire na naoise seo eairé agus i ué na naoise seo. Ní bameann sé ac eumceat 16 uair a eiois de galeán eul eio an geandil ainois. Tá an eandil 450 eiois an teiteat agus 40 eiois an uóimeas, agus ní bac an long a bpuil 34 eiois uisce a eamiac aici an eandil u'úsáio. Is mór an eul eum eum é sin. De réir mar a táinig teatú an gúisiteáin agus an mneallra oile eáinig eoracó an eadacé na eandilac toise a mbíonn de umar-galeán as eadacé eum le lanta ile.

S u e z

Nuair a bíonn bólaet an énoe agat, ní bíonn suaimneas an sop agat. Sin mar acá as an bfrancacé agus as an Sasanaó ó táinig ac-boracó an an geaimire iom anabais agus gúisais agus ó táinig mí-suaimneas agus mí-éacacé an mneam na n-Éigipte nuair ná raib don baint eum le mianacáin na eandilac a eumnaoinn a uéir uéacá.

Bíon 32 eumtóil an an geomúet a veimeat Cándil Suez a mar go dtí go noeagair na n-Éigipte i mbun gúin an a veimeat péim. Franncacis a b'eat uime agus píce de na eumtóil, Sasanais a b'eat veimúir oíob. Franncacis ba mó a eumtóil oiréi mianacáin na eandilac, ac ba le Sasana 7/16 de veacáca na Comúetá ó 1875 teit. Ba le Sasana, leis, teat na lant a eugac eum an geandil ó oetacáio i sa bliain 1869. Nion eugac ac 436,000 eonna eum an geandil an bliain sin—is mór iom eon agus 32,732,000 eonna sa bliain 1946, nuair ná raib eadap na veioita a bí sa cogair 1939-45 ac as eumtóil ón eiois a veimeat oiréi i ué na sé mbliain ean.

Má pior na vean-eacáta i ocosacé a bpuir de eacine bás san Éigipt as galeán na Cándil Suez eum né na eumtóilac, in amsin Ráiméin II, bí eumall eigin ós eion na eandilac ó toise, agus nion síl veire eum na georac ón eumall san pú, de réir gac eumacáca.

e. ní gíolla buí.

The Three Capitals

RIO FROM THE SEA

(J. W. Walsh, Senior Science 1)

RIO from the sea is indeed impressive. The bay, one of the most beautiful in the world, is dominated by twin sugar loaf mountains rising almost vertically with a statue of Christ the King on the summit of one. Quite often the lower portions of the mountain are obscured by cloud and the appearance of Christ in the clouds is a sight to be remembered. At night the crown of thorns is illuminated and can be seen thirty miles out to sea.

As the ship draws near, Rio is seen to be one of the most colourful and alive capitals to-day. This is a young city—vivacious and gay. The buildings are modern and of the sub-skyscraper type, often surmounted by a wide variety of

T.V. aerials. The streets are long, wide and shaded; there is a continuous stream of vehicles. Driving is mostly on the horn and Paris is a polite merry-go-round in comparison.

The numerous public parks are displays of massed colour. Butterflies of four to five inches wing span, remind one that this is a sub-tropical climate. Song birds are rare, but what they lack in voice they compensate in brilliant plumage.

At last the ship glides smoothly into the natural harbour, and there the famous Copacabana beach, playground of millionaires, glitters invitingly. Rio de Janeiro, pride of the south, and city of the sun, really leaves a desire to return.

PARIS FROM NOTRE DAME

(P. A. O'Neill, Senior Science)

THE towers of Notre Dame cathedral welcome an incessant flow of tourists, and they in turn welcome the opportunity to drink in the magic of Paris, from the balcony over the ancient portico. The Seine, a deeper blue than most rivers, idling lazily by on both sides, and the open square immediately in front, give the impression of peace and tranquility. So too, do the innumerable booksellers on the left bank, plying their wares as if their presence there is of more importance than the actual transaction of business.

Further away there is evidence of more robust Parisian activity, where the glories of the past are commemorated in steel and stone. A little to the left, seemingly vying for height with the clouds, is the giant Eiffel Tower, a modern Babel, epitomising the skill and resource of French engineers. Almost directly ahead, the Arch of Triumph stands boldly at the top of the Avenue des Champs Elysees, as proud and strong as the spirit of the man who built it. The two Bohemian quarters are on either side, Montparnasse on the left, and on the right, the rising mound of the Montmartre, crowned by the white dome of the Sacre Coeur. The noise of the traffic is muffled on this island in the river. Night falls and the lights of cars punctuate the darkness as they make their hectic way along the Grands

EDINBURGH FROM THE ROCK

(Seán Loughran)

FROM the ramparts of Edinburgh Castle the Scottish Capital looks a sprawling, yet tidy mass, nestling at the foot of the Pentland Hills. Many towers and spires thrust their way proudly to the clouds, but dwarfing even the highest, is the huge Rock. From the ramparts of the fortress-like Castle, perched precariously on the top, the Rock is seen to be unscaleable. The Castle gave refuge to the inhabitants in time of war and consequently the city was built around its base.

The Royal Mile, which runs through the old half of the city, stops abruptly at the gates of Holyrood Palace, the seat of Scottish Royalty, and home of Mary, Queen of Scots and Bonnie Prince Charlie. Four spires denote the position of St. Giles Cathedral, the centre of Scottish Presbyterianism. Engraved on the pavement outside its doors is "The Heart of Midlothian," on which Sir Walter Scott based his famous novel.

Edinburgh, the capital of Scotland, slumbers peacefully as darkness closes in from the North Sea. The lights of the modern quarters have blazed into light and then slowly dimmed again and the city, old and new, gives itself up to dreams and restfulness, perhaps remembering when it was the centre of a Catholic Gaeldom.

Boulevards.

Gradually the illuminations and neon signs pulsate into life—Parisian night-life has begun.

Senior Students' Union

THE editorial of the 1955 "Alchemist" commented on "the desirability of integrating the activities" of the Institute through a Senior Students' Union. It then opined that "the time has now come for the establishment of such a Union." A year has passed since such opinions were voiced and subsequent events indicate that the "Alchemist" was a little premature in its suggestions. The whole fabric of social life in the Institute has, however, undergone radical changes since last Christmas and a situation has now been reached where a Senior Students' Union is not only desirable but a dire necessity.

In the last twelve months student initiative has produced an all-student magazine, expanded the Debating Society into the most flourishing in technical education, formed a Gramophone Society, a Film Society to produce 16mm. documentary films, a School Dance Band, An Cumann Gaelac, and a Dance Committee under whose auspices a most successful series of ceilis and modern dances have been run. Mention also must be made of the numerous sporting activities which in recent years have received enthusiastic support and the annual production of the School Concert

by the Drama Group, now in its fifth year.

Still more projects are mooted. The holding of a "School Week" in the Summer and "An Seachtain Gaelac" in March are the most ambitious. Societies pertaining to Chemistry, Electrical Engineering, Photography and Amateur Radio are envisaged for the immediate future, and the holding of Film Shows and Popular Science lectures is receiving earnest consideration.

With so many societies and groups functioning simultaneously without a central authority, it is obvious that our social life will not run smoothly in a unified pattern; many activities will clash, and much administrative work will, of necessity be duplicated. Even at present a lack of cohesion is apparent and the advent of the proposed groups will only serve to complicate a situation already bordering on the chaotic. Present difficulties have been further aggravated by senseless reluctance on the part of certain sections to enter into — or even approve — student activities.

The problems which now beset us will grow in magnitude, and the sense of achievement which would normally be derived from our

endeavours will be superseded by FRUSTRATION and confusion. Our present social structure, catering for over 2,000 students, is a discomfiting labyrinth and its many imperfections prevent students and staff alike from enjoying the full benefits of their efforts. The "Alchemist" is convinced that the remedy lies in the formation of a Senior Students' Union which, embracing all within its broad framework, and founded on a fluid system of authority, could by prudent and judicious leadership supply the solution and invigorate and expand extra-curricular activities to a degree now impossible.

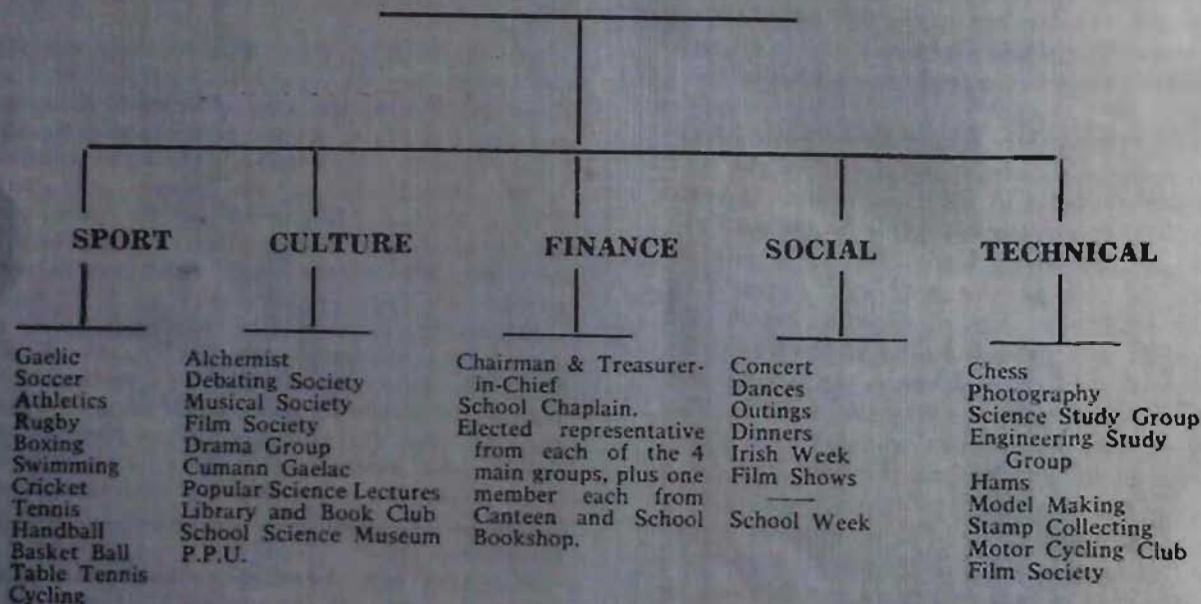
The aim of the Union would be the integration of all extra-curricular activities of the students and the co-ordination of efforts calculated to further the social life of the Institute. The student body, under such a single authority, could be readily forged into the homogeneity now so desirable.

Membership would be reserved to all students of the Institute, day or night, full or part-time, who had reached the age of 16 years at the beginning of the academic year. A student who had not reached his or her 16th birthday on enrolment would be considered an associate member of the Union and deemed eligible to participate in all activities except as where otherwise stated. On reaching the stipulated age limit an associate member would apply for full membership, and if accepted would qualify for a membership card. There would be no upper age limit.

In the plan submitted to Mr J. Cranley, Principal of the Institute,

SCOPE OF PROJECTED SENIOR STUDENTS UNION

EXECUTIVE COUNCIL





The recent debate versus College of Domestic Science, Cathal Brugha Street, in progress with our Auditor, Mr J. Carroll, speaking.

early in September, 1956, the following personnel were proposed: Patron—Very Rev. J. Canon Fitzpatrick; President—Mr M. Gleeson, C.E.O.; Vice-President—Mr M. J. Cranley.

An Executive Council composed of six students and four teachers and the chaplain, would be considered the governing body and would convene monthly or at any time considered necessary. Under its direction such activity could be divided into four broad divisions: Sport, Cultural, Social and Technical. The scope of the Union is explained diagrammatically in Figure 1. Each group would be affiliated to the

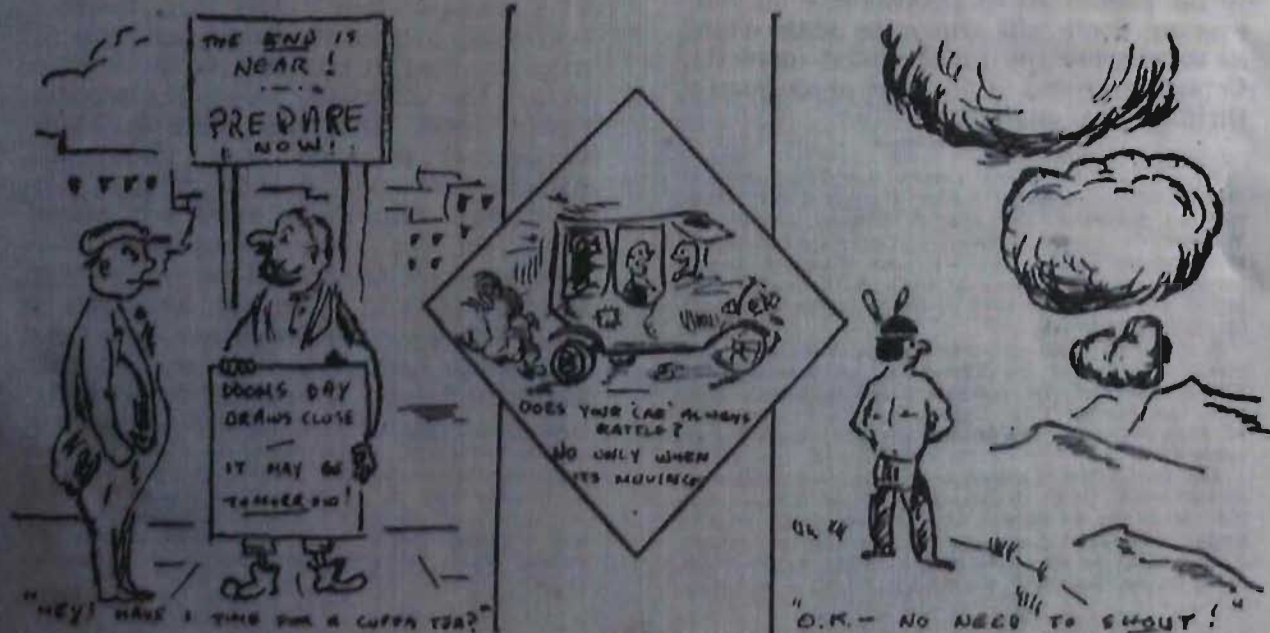
Senior Students' Union through one of the four councils guiding each division, the nature of its activities determining the council through which its application would be made. The Chemical Society would thus apply to the Technical Council, and the Boxing Group to the Sports Council, the method applying to all societies and groups. The scheme, it must be emphasised, is still subject to alteration.

The members of each group would vote three officers to officiate for the school year: Chairman, Secretary, Treasurer. Election would automatically entitle the officers to membership of the Council govern-

ing their particular division. Thus the officers of the Film Society would be members of the Cultural Council. The four main councils would elect their officials—Chairman, Secretary and Treasurer. The Chairman then, by virtue of his position, being appointed to the Executive Council. Thus four students, each representing his own division, would qualify to sit on the Executive Council as a result of two elections. The remaining two students' representatives would not be elected, but appointed as Senior students, one representing day students, and the other representing night students, and would alternate as Chairman of the Executive Council. A selected member of the staff would act in the capacity of advisory director of each division, sitting on its Council and on the Executive Committee. The Chaplain of the Institute would be co-opted on the Executive Council and would participate in any function or activities of the Union as he desired.

No student, while entitled to membership in as many groups as desired, could hold office in two or more such groups. Subject to ratification by authority, each pupil would subscribe 5/- per annum, payable on enrolment at the Institute, the revenue so derived being utilised to finance the functions and activities of the Union. Each group could, if it decided, also propose a membership fee not exceeding 1/-. To cope with such a large amount of revenue it would be deemed advisable to form a finance committee as a subsidiary of the Executive Council. The Treasurer of the Executive Council would act as Chairman of this Finance Committee and it would consist of the Treasurers of the four main divisions and

(Continued on Page 41).



The Sports Editor asked for sports thrills. Only three brave men obliged and then one preferred to be anonymous.

My Sports Thrill Of The Year

P. Bennett, B.Sc., 2nd.

ALTHOUGH it may not have been the fastest mile ever run, the Delaney-Hewson set-to in Lansdowne Road on June 25th last gave me my sports-thrill of the year. It contained everything for which an athletic enthusiast could possibly ask, plus the actual result which caused such a controversy.

The race started quietly with Delaney content to lie in second place behind Allan Gorden, and Hewson bringing up the rear. With the $\frac{3}{4}$ mile passed in 3m. 8secs., all hope of a four minute mile had vanished, but interest never flagged now that Delaney had taken over the lead from a tiring Gorden. With 200 yards to go, Delaney increased his pace, but Hewson, who was now in second place, was following closely behind. A 100 yards to the tape Hewson drew level. Slowly he began to forge ahead. Delaney, who was far from beaten, however, battled back every inch of the way. Five yards from the tape, he flung himself forward in a last desperate effort to snatch the laurels from Hewson. The tape was broken with inches separating them.

A dead-heat seemed possible, but I was totally unprepared for the official result, which was of course — Hewson had won. However, the judges were nearer to the line than anybody else in the ground, but to the thousands in Lansdowne on that evening there will always be some doubt as to whether the judges ruled correctly. Certainly we can never hope to see such a thrilling race again.

Who, among the 60,000 present can forget the last minute of the Leinster Senior Hurling Final, 1956, between Kilkenny and the All-Ireland champions, Wexford. It was this moment that gave me my sport's thrill of the year. This was the Wexford team's hardest match in defence of their All-Ireland Crown and it was Kilkenny's keen desire to be the first team in eighteen months.

It is almost time and Wexford are leading by one point. The "Matt the Thrashers" of Wexford and Kilkenny have played themselves to a standstill. And now the Marble City fifteen make a last supreme effort to overpower the holders and are awarded a 21 yards free.

The vast crowd is stilled to silence as the Kilkenny sharpshooter, Willie Walsh, prepares to strike. But no! It is not to be yet—the referee speaks to the striker. The crowd can almost hear him say, "there is only time for one more stroke of the ball." "Oh for a Nicky Rackard" I am sure I hear a Kilkenny



[By courtesy of "Irish Press,"

Olympic champion, Ronnie Delaney, flings himself at the tape. The photo shows Delaney winning but the judges decided otherwise, awarding the race to Hewson. However, Delaney had his revenge at Melbourne.

B. Halligan (B.Sc.II Night)

THE ball hung fractionally in the air, Ronnie Nolan rose high and sent it crashing into the net — and Rovers had won the 1956 F.A.I. Cup! Like all their supporters I had watched the first half with exasperation — the ball bobbing ceaselessly around the Cork goal, refusing to go in. And then Cork's two quick goals to take the initiative. Slowly the minutes ticked away and the Athletic clung tenaciously to their lead. Could the "Hoops" live up to their famous Cup tradition? Hamilton's great left footed drive set the game alight and, amid agonising excitement, Hennessy levelled from a penalty. Two all and only a minute to go, a perfect corner from Coad and Nolan had made it three. On that beautiful Sunday afternoon "Coad's Kids" had given me my sports thrill of the year.

supporter say. The ball is struck—it's low—it's a goal. But no! It cannons off a defender's hurley and skies over the bar for a point. The match is over and Wexford are on their way to yet another All-Ireland crown while Kilkenny must wait for another year.

—SPOT.

A Prime Minister; a film star; a coffin— it might be anything if you spend your

LIFE IN CHARTER FLYING

Dermot C. Clarke American Air Dispatch

HAVING spent somewhat over five years flying with scheduled air lines, it was a very big change when I moved into the charter side of aviation. Previously my life was planned for months ahead, and I could with confidence book for a theatre or show, but now I could no longer guarantee from day to day, nor in fact from hour to hour, where I might be. It might be Austria, Finland or Africa. It might be with a Prime Minister, film star, news reporter, or coffin.

Sometimes an urgent midnight call would send us down to the Channel Isles or up to the Hebrides, there to pick up an ambulance case and rush to hospital. For these, we were always ready, and there are several people alive to-day just because we were readily available when urgently needed. However, we did not always make it in time, and I have known the tragedy of some dying in the aircraft.

Italy and Ireland were the two countries to which we most frequently flew home the mortal remains of an exile, or of someone who died whilst on holidays. Just why it was so often these two countries, I decided was because of their Catholic faith. Many religions allow cremation and so the small cask containing the ashes could be flown on the airlines, which seldom will carry a coffin.

FLYING ENTERPRISE

Another side of our operations was flying to all the race meetings in Europe, where we often landed on the course. We covered motor and cycle races, Dunroed, Isle of Man or Le Mans. If there was news breaking in any area of Europe we brought the reporters and photographers. Often it meant aerial photography, as in the "Flying Enterprise" drama, or the great storm of two winters ago. These events and many others found us flying the movie newsreel cameras and newspaper men. From the cockpit I have seen many harrowing scenes and many people die. Most poignant was the Goodwin Lightship lying on her side, her crew trapped within and the tide gradually covering the vessel. I have looked down upon the tangled twisted mass of wreckage in many train disasters, or watched ships crews being snatched from storm-

wrecked vessels. However, it was not always tragedy, and to recall a joyous occasion, was seeing the "UNITED STATES" ship arrive in France on her maiden record-breaking trip, her flags and bunting flying and the reception which she received from every ship as she passed by.

The Saturday of a big cup final was a busy day, for by the following afternoon the film would be on show in all corners of the U.K., and it was our flying the film, first to London for processing and later to all areas that made this showing possible. Our whole organisation in accomplishing this was so slick that one company actually made a film of us doing it.

BORED FILM ACTORS

One of the most interesting jobs was to be selected to fly some singer or star on a tour of Europe. The airlines are not of much use to their timetables so we would stay with them for the tour, flying from Lisbon to Paris, on to Rome or Copenhagen as required. Often we had the best seats at the best concerts in Europe. In these trips we came to meet Princes and Ministers, jockeys, film stars and bishops. We had many incidents, on one occasion, carrying a very portly archbishop who was so huge that I had to lean with both hands on his priestly corporation, so as to enable him fasten his seat belt. On another trip we rushed a load of car crash victims to London. Not all of them survived.

People's occupations seem to determine their characters to a large extent. The most cheerful were always the jockeys, and racegoers; the least cheerful were politicians. Film actors mostly seemed bored with everything, and many of them do precisely as they are told, as if on a set.

One very wealthy man often hired us on a very cloudy day, it being his only thrill in life to fly in and out of clouds and the more dense they were the more he liked it.

There was a very famous orchestra which invariably left something behind and so we had to collect it, once it was

(Continued on page 42)

JUST 100 years ago, in the month of May, 1856, an Irishman was born in the City of Dublin, whose life to all external appearances was so eventless that it would have receded into the mists of oblivion but for the chance discovery of a heavy chain encircling his body, when he dropped dead in Granby Lane in June, 1925. Not one man in a thousand would have had such an uneventful life; and when you find such a man, he is usually as featureless as his life. Not so with Matt Talbot! The monotonous daily round of loading timber in the yard of T. and C. Martin for the final thirty-three years of his life was but the cheap frame which enshrined a masterpiece of unestimable worth. For this man was full of heroism and sanctity.

THE CHILD

Matt was one of a family of eight brothers and four sisters. Their parents were excellent and sensible Catholics, in whose home the family rosary was a daily feature. When Matt was old enough to go to school they sent him to the Christian Schools, Nth. Richmond Street, where he remained until he was twelve years old. When his school days were over he became a messenger boy with a firm of wine merchants who did an extensive bottling business for Messrs A. Guinness. Here the young boy learned to take drink, quickly the habit grew, and before the year was out he came home under the influence of drink. His father gave him a severe beating and removed him from his job with the wine merchants. He found him another job with the Port and Docks Board, in which he, Charles Talbot, was in charge of the bonded stores. For Matt it was a case of "out of the frying pan into fire"—for while at Burke's he had taken stout, here the drink was whiskey. His father first tried persuasion and then the more drastic remedy of the rod, but to no avail; and as his boy grew to manhood, he saw him become a drunkard on whiskey taken from the very store of which he himself was in charge.

THE MAN

At the age of 17, when he was able to take a man's job, Matt left the Port and Docks Board. He realised the disgrace he was bringing on his father, so he took a job as a builder's labourer. But the habit of drinking did not leave him. He was an excellent worker and did not neglect his job; but in the evening, after the day's

work, he repaired to the pub with some friends, and there they drank until closing time.

Sometimes on Saturday he would deposit his week's wages with the publican and drink through them, so that by the following Tuesday all would be spent. Then he resorted to pawning his clothes in order to quench his insatiable thirst. For ten more years his life followed the same pattern; and then suddenly came the decision. Out of pocket and craving for a drink one Saturday, he had failed to get one; his friends had passed him by. That afternoon he told his mother he was going to take the pledge. "Go in God's name," said she, "but don't take it unless you're going to keep it." Matt took the pledge, and with the same thoroughness with which he had taken to drink, he now abstained. After the three months he renewed the pledge for a year, and then for life.

THE STRUGGLE

What must have been that harrowing struggle in the soul of this man of 28 who had been a habitual drunkard from the age of 13! It surpasses our imagination. It cost him agonies, but from the beginning he planned the warfare for freedom of his soul with rare common-sense. The old drinking companions, the old haunts, every street in the city with its bar—all were a severe temptation for him. Hence Matt would be in the street as little as possible. And since his own nature was craving for drink, he needed help from outside himself. In the Church he would be out of the way of temptation and in the way of the help of God. But his difficulties were immense. Prayer is one of the hardest of the works of man, and doubly so for him who had neglected prayer and the Sacraments—though not Sunday Mass—these years past.

THE SAINT

Matt Talbot was a man of immense courage, thorough in all he did. His was a programme to damp the zeal even of the most zealous—at 2.30 a.m. his alarm clock called him to prayer until 4.00 a.m., daily Mass at 5.00 a.m. and work began at 6.00 a.m. And in the evening after work he paid a visit to a distant Church where he remained until the church was closed. The entire week-end—meal time excepted—he spent in the church, remaining from 6.30 a.m. on Sunday morning until Benediction after the 12.00 Mass without

breaking his fast. His penances were as thorough-going as his prayers. He slept on a plank bed with a wooden pillow, covered with a half blanket, summer and winter, allowing himself the luxury of a few sacks in very cold weather. Around his body he wore chains even when sleeping. The chain around his waist was the size of our ordinary horse trace and embedded itself into his flesh. But so humble, cheerful and "ordinary" was he, that many of his closest acquaintances were unaware of his austerities. Among the books read by this man who had left school at the age of 12, and who was known to have written only one letter during his life, were found works of deep ascetical and mystical theology!

The chance discovery of the chains around his body and arms led to enquiries which subsequently revealed the heroic sanctity of this man, whose external life was so utterly devoid of anything remotely interesting, even 100 years ago, and whose insignificant stature and plain appearance belied the heroic stature of the man within. Matt Talbot's life provides poor "copy" for the modern reader, whose taste for the sensational, the

ostentatious, the shallow, would be sadly deceived by such obscurity and such rigour.

He was in line with the tradition of Irish sanctity—a deep faith and personal loyalty to Christ, whose cross was His throne and whose death was life-giving. Very saintly people are always a reproach to their fellows who are not saints, even though their example must demand at least a grudging admiration.

The cause for the Beatification of Matt Talbot has at last reached its final stage before the Sacred Congregation of Rites. It is to be hoped that the example of Matt Talbot, the deep personal conviction of his religion, the immense courage of his generosity, the unostentatious thoroughness of his life, may throw out a challenge and an inspiration to modern Irish Catholics, amongst so many of whom the faith is but an external show, lip-service to the cause of Christ, a shallow veneer which covers a pagan heart—that comfortable compromise with pagan ideals and the standards of those whose attitude to the crucified Christ is the supercilious shrug of the shoulder of men who in their hearts are cowards. (P. Cummins, S.J.)

Sound Waves

By Michael Murray (D.J.I.)

It was to be the perfect crime, yet the mistake was so simple

JOE STOWSKI was crouching over his tele-radio screen in a little hut in the middle of a dense wood in New York State. He looked into the screen and saw a man crouched in the doorway of a shop near the waterfront. This was his accomplice Louie, the best cracksmen in the State. He looked at his watch and spoke into the mouthpiece. "Move, Louie, the flatfoot will be prowling now." Louie received him on his walkie-talkie and moved off.

The Patrol-man flashed his torch on the door and passed by. Out of the blackness a dim figure slipped quickly. Louie had returned. Skilled fingers worked delicately with celluloid, the lock slid back and the door opened. He stepped gingerly over the alarm wires and turned off the master switch that controlled them. Then he got to work. By the light of his shaded torch he fingered the dial on the big safe. Sweat poured from him as he listened to the click of the tumblers, his rubber clad fingers slowly seeking the

correct combination. The job was taking longer than he thought. Suddenly, to his intense relief, the safe door opened. Feverishly he filled his sack with dollar bills, glancing nervously about, as if expecting trouble. The safe was soon emptied and he made a quick examination for any clues he might have left. Satisfied, he left as silently as he had entered, and entered the street. A police car stood waiting for him, in a minute he was bundled inside and whisked away.

Joe Stowski seeing all this on the screen of his tele-radio, gathered his belongings together, and set fire to the hut. He raced into a clearing and jumped into his car. With a roar he sped off into the night, only to be stopped a half-mile away at a road block and taken into custody.

When the evidence was presented in court, the two criminals heard what had happened to their "perfect crime." They had made but one mistake — they had operated on the police wavelength!

Flowers in a Garden of Weeds

A MAIDEN'S PRAYER

At sweet sixteen I first began,
To ask the good Lord for a man.
At seventeen I recall,
I wanted someone broad and tall.
The Christmas I reached eighteen,
I fancied someone blonde and lean.
And then at nineteen, I was sure
I'd fall for someone more mature.
At twenty I thought I'd find,
Romance with someone with a mind,
I changed my mind at twenty-one,
And thought college boys most fun.
My viewpoint changed at twenty-two,
When "one man only" was my cue.
I cried aloud at twenty-three,
For someone who'd be kind to me,
I begged with blasé, at twenty-four,
For anyone who wouldn't bore,
Now Lord, that I am twenty-five,
Just send me someone who's alive.

Mary Robinson,
Pre-University.

MEMORIES

(Denis O'Sullivan, R.O.)

"When waves came lapping on the strand,
With ripples shimmering in sunshine
bright,

I think of home so far away,
Then darkness falls on an exile's night.

"The harbour grows live in bursting dawn,
My ship awaits on a foreign quay,
Often I wonder if e'er again,
My land and home, I'll ever see.
The ocean parts 'neath a strong ship's
bow.

Ten thousand miles go dim behind,
And soon on the rim of a watery world
A green isle appears.
But hold. The mists of sleep arise,
And all around are foreign skies."

And that which would appear offence in
us

His countenance, like richest alchemy
Will change to virtue and worthiness.

—Julius Caesar.

CLOCK AROUND THE ROCK

T. P. Ryan (R.E.I. Night)

Half-two, three o'clock, four o'clock shock,
Half-four, five o'clock, stop the darned
clock.

Diffusion, osmosis, expansion stop.

Five o'clock, time up, nerves gone pop.

Did you do number four, what answer did
you get?

I didn't and I couldn't if I stayed there
yet.

Frowning and fuming, there do I sit

Steeped in gloom, in despair's worst pit

Confusion confounded—deep despair

We want to drop it all—we care not where.

Lambs to the slaughter—on the sacrificial
altar.

Results and percentages stumble and
falter

Working like demons on the rocking stage

Stopping the clock in the examination
cage

Oh confusion! G.C.E.

What "crazy" things you did to me.

A FOOL IN LOVE

Who am I to speak of dreamland,
Of castles in the air?

And knights in shining armour

Riding to dragons in the lair?

When spring is come and blossoms

Fill rolling meadows fair,

And summer painting the leaves

For Autumn does prepare,

Who am I to speak?

While winter comes storms

Rage black all o'er,

Who am I 'spell to darkness,

To shed the light once more!

To turn the tide and quell

The tempest's deadly roar.

And sooth the stars to play and peep

Their beams to pour,

Who am I, a fool, to speak?

Seán.

We also boast of a County Footballer.
Here the latest Dublin star describes

Padraig O Dunai.

My Senior Inter-County Debut

AS the Dublin team ran on to the field at Newbridge to play the Leinster champions, Kildare, in the O'Byrne Cup Final, the clamour of the crowd was drowned only by the beating of my heart. Surely I was dreaming on that day, Sept. 30th, 1956, or was this really my debut as a senior inter-county footballer?

While the defenders went back to take up their positions, I never realised that I could find myself in such a nervous state. My feelings were obviously expressed on my face, but a kind remark from right half-back "Moss" Whelan helped to ease the tension. When I looked at the sea of faces around the ground, my thoughts flashed back to the time when, as a youngster, I first knocked a ball with the parish team.

Making the inter-county grade as a minor, and later as a junior, was an indication of what lay ahead. From this point onwards my one ambition was to play for my county in the senior grade and when out practising with my club mates, I always trained hard and zealously. After playing a few good matches for my club, St. Brigids, I was surprised and delighted one Tuesday morning to see my name listed as the Dublin centre-half-back for the following Sunday. During the remainder of the week I tried to appear unconcerned about the coming match against Kildare but I'm afraid that here I failed, as my every thought was football. On the Saturday night preceding the game I had a most vivid dream. In my sleep I could see myself playing a "blinder" and after the match being hailed as a hero. Imagine my disappointment when I awoke to find that the game had still to be played!

The morning of the match dawned bright and clear and, having received good wishes from most of the parishioners, I set out by car for the venue. In the dressing room before the game I

wished that I could feel as indifferent about the whole procedure as such well-known players as "Oilly" Freeney, "Moss" Whelan and "Snitchie" Ferguson. I sat in a corner thinking about the coming fray and feeling that I would be much better off somewhere else with no worry or anxiety on my mind.

Often in the past, when I attended Croke Park for some big match, I imagined myself out there on the pitch feeling unconcerned about the crowd and playing a right good game. Now that my day had dawned I felt nervous and upset.

The whistle shrilled, the ball was in, and the game was on. I quickly mumbled a silent prayer, and I realised that now, as never before, I must be wide awake and alert. After a minute or so of play the ball came towards me, and with an instinct nourished with years of practice, I clutched it with safe hands to my chest and quickly kicked it far upfield. From then on my troubles vanished. The ball sped up and down the field, contested all the way, and no one asked for any quarter in the hectic play that ensued. The Leinster champions played with great determination to humble the wearers of the blue. A point soon put the Lily Whites into the lead but the boys in blue rallied and a great goal by "Oilly" put them ahead. Both teams were well matched until the last quarter when the superior fitness and all-round ability of the Dublin team began to tell. From here until the final whistle the lads from the Capital notched a few minor scores to leave them victors 1-10 to 1-3, after a hard struggle.

When leaving the field I felt satisfied with my senior debut and was already looking forward to the next important match. This was really a memorable occasion and, having listened to "Sean Og" on the radio, I hoped there would be many more of them.

LIFE'S PARADOX

Little girls like dolls.

Little boys like soldiers.

Big girls like soldiers—

Big boys like dolls.

P. Lockhart.

NO DEGREE

A divinity student named Tweedle,

Refused to accept his degree;

While he didn't object to the Tweedle,

He just hated the "Tweedle, D.D."

"LAUGHS IN SHORTS"

John O'Flaherty

Last Whistle:

Timid Referee (before the game): "Now the last thing I wish for is unpleasantness."

Tough Player: "Have you any more last wishes?"

.. ..

Honest:

A sporting actor finding himself temporarily in a small town, said to his landlord on Saturday afternoon,

"Your town boasts a football team, I suppose?"

"No," replied the man, sourly "we've got one, but we don't boast of it, we just endure it."

.. ..

For all Fans:

Cup Final Eve Resolution:

"Must get to bed early to-night, old man, got a very hard game to watch tomorrow."

.. ..

Miraculous:

The unfortunate rugger player had his arm broken in a fierce match, but his sense of humour was undaunted.

"Well, doctor," he murmured faintly when he had been carried to the pavilion, "shall I be able to play the piano when this arm has mended?"

"Oh, yes, of course you will," replied the doctor.

"That'll be nice," said the player, "I never could before."

.. ..

Speed Merchant:

George: "Is that new winger fast?"

Tom: "Yes, he's so fast that the inside left has to run twice as fast as he does to keep up with him."

Good Excuse:

"You're very late getting up this morning, dear."

"Yes, I was dreaming I was at a football match, and they had to play extra time."

.. ..

To impress the guest of honour, the College Professor toastmaster was delivering a painfully erudite speech of introduction. Presently he mouthed a pretentious-sounding French word and, turning to the guest of honour, smirked, "That's the way the word is pronounced, isn't it, Professor?"

"Oh, my, yes," agreed the man of learning. "Frequently."

.. ..

Legend on an Arkansas chaplain's door: "If you have troubles, come in and tell us about them. If not, come and tell us how you do it."

.. ..

Some people don't have much to say, but you have to listen a long time to find out.

.. ..

An American G.I. was on leave in London. After a few days of celebration he got himself into a dilemma. He had dined and wined, not wisely but too well. But a Pfc. in the infantry is a "5-star General" of resourcefulness. He caught up the speaking tube and shouted, "Stop!" and jumped out. "I just want to hop into this tobacconists and get some matches," he explained to the driver, "I've dropped a five pound note somewhere in the cab and I can't find it in the dark." He entered the tobacconist's and, as he did so, the cab driver vanished—as he anticipated.

She jilted me in '53

In mourning weeds I draped me;
But now we've met, I can't regret
The fact that she escaped me.

And in her eyes was no disguise,
For they declared with candour,
The fact that she, on seeing me,
Was glad I didn't land her.

D. McK. (R.E.1.)

The Irish and the Atom

Joseph Carroll (2nd year B.Sc.)

THE title "The Irish and the Atom" may cause surprise because it is generally assumed that Irish contributions to the development of science are negligible and the tendency is to regard Ireland as a backward nation in the field of study. However, many branches of study were notably cultivated during the 17th and 18th centuries. There were two main lines of development; one by means of institutions and the other through the hedge schools and hereditary influences.

In 1661, Robert Boyle, "father of chymistry and son of the Earl of Cork" wrote, "and to prevent mistakes, I must advertise you and I now mean by Elements, as those Chymists that speak plainest do by their Principles, certain primitive and simple, or perfectly unmingled bodies; which not being made of any other bodies, or of one another, are the ingredients of which all those call'd perfectly mixt bodies are immediately compounded, and into which they are ultimately resolved." The prose may lack the clarity of the modern tabloid Press, but the passage marks an epoch in the development of chemical thought. It was the first real approach to our present concept of an element; foundation of modern chemistry and the experimental method; it was the first step in the development of Nuclear Fission.

THE ATOM IS BORN

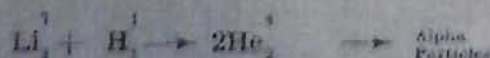
In 1789, the Irish Chemist, William Higgins, who believed that chemistry could only advance when it was cultivated by "men of genius, fortune and leisure," developed previous rudimentary ideas on the constitution of matter derived from the Greeks, and applied them to the interpretation of chemical phenomena. At the age of twenty-three Higgins published his first and most important work, "A Comparative View of the Phlogistic and Anti-Phlogistic Doctrines," as an answer to Kirwan's Essay on Phlogiston. On this work rests Higgins' rightful claim to priority in the enunciation of the atomic theory (which is usually attributed to Dalton). This theory may be stated as follows: (1) Atoms are real discreet particles of matter which are not

sub-divided in the course of chemical change. (2) Atoms of the same element are similar to one another and equal in weigh. (3) Atoms of different elements have different properties and differ in weight. (3) Atoms of different elements was perhaps the first and certainly most important step of all in the advancement of the study of atomic science.

INTRODUCING THE ELECTRON

For almost a century, the atom was regarded as a simple solid ball. From experimental results obtained in 1874 by G. Johnstone Stoney, professor of Natural Philosophy in Queen's College, Galway, and Secretary of the Royal Dublin Society, it became clear that the atom was not an indivisible entity, as the Greek word from which its name is derived suggests, but rather was in itself a complex structure. From his experiments in the field of electro-chemistry Johnstone Stoney indicated that there was at least one fundamental unit quantity of electricity associated with each atom. He later called this quantity an "electron."

Unfortunately it was not an Irishman who discovered the proton, so we cannot claim a complete monopoly. However, it is seen that Ireland did contribute the basic principles, having defined the elements, enunciated the Atomic Theory, discovered the electron and in general having led the world to atomic research. Was it not only fitting, therefore, that an Irishman too should "split" the atom. In 1932 Professor Walton, who is now professor of Physics in Trinity College, as a young research student at Cambridge, fired protons, accelerated by an applied potential of 600,000 volts at Lithium. He found that the Lithium isotope of mass number 7, under bombardment by high-energy protons, may capture a proton. The resulting nucleus then disintegrates. This reaction is expressed by the scientist as follows:



This effect is cumulative, each time a vast amount of energy being released. Thus, our great Irish physicist, Professor Walton, found the key to that vast store of energy which since the beginning of

(Continued on page 37)

SPORTS PARADE

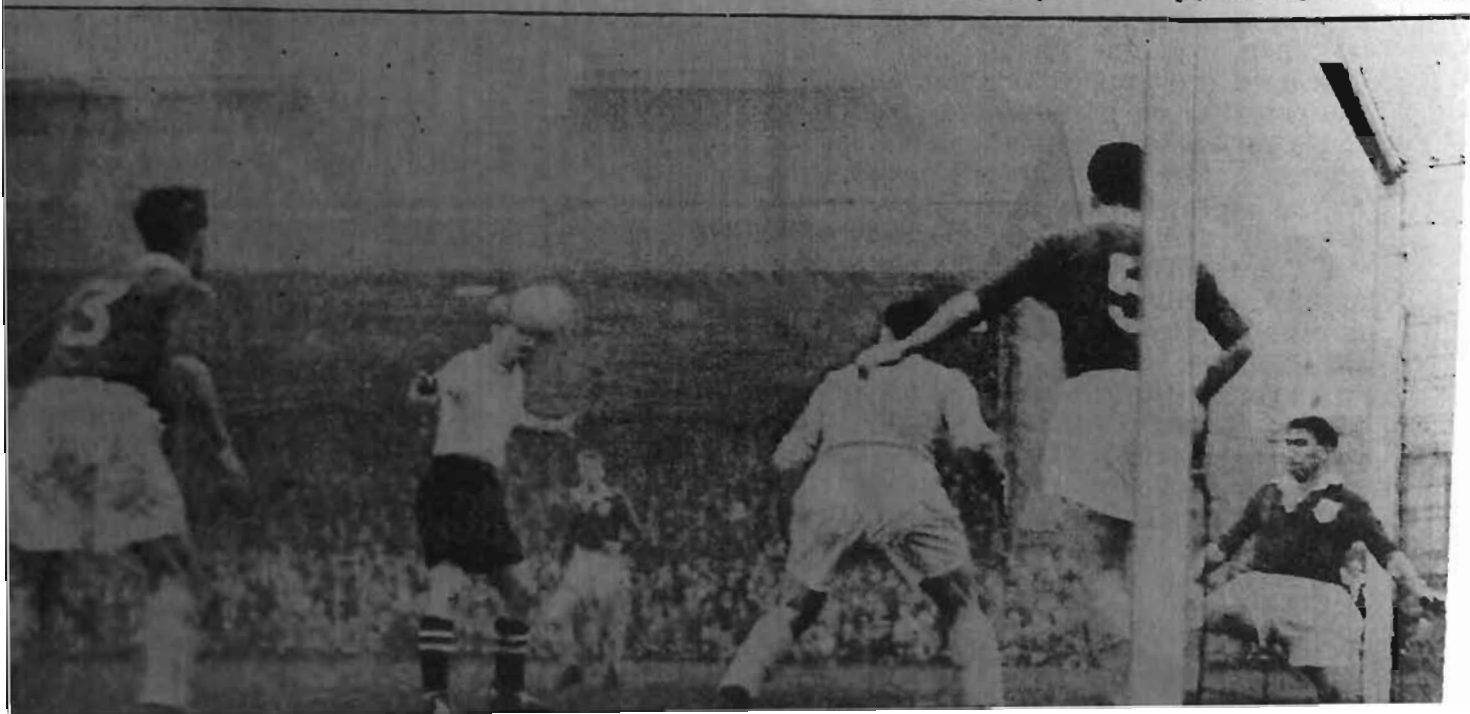
A. Morgan (B.Sc. Night)

Athletics.—Two names which will not be readily forgotten by A.A.U. patrons are those of Ronnie Delaney and Eamonn Kinsella. Two years ago, Delaney made himself known to Irish athletic enthusiasts by virtue of a 1m. 55secs. 880 yards. Now, at 21, he is the fourth greatest miler in the world, with a time of 3m. 59.0secs. Kinsella, by his brilliant consistency in International competitions this year (we excuse his Olympic lapse) has earned for himself the title of champion high hurdler of Europe. In 22 International events, he has won 20 and finished second in the remaining two. N.A.C.A. patrons will laud the deeds of Peter McArdle who, this year, set up records for all recognised distances from 1 to 6 miles. Congratulations to the Kerry cycle team on retaining the Ras Tailteann crown and winning both team and individual sections.

Boxing.—At the end of the last boxing season, the Irish boxers earned a much respected niche for themselves in the world of amateur boxing as a result of crushing victories over the A.B.A. and the American Golden Gloves team. Now, at the beginning of this season, they have carried on the good work by decisive victories over Wales and Scotland. On going to press, F. Teidt, F. Gilroy, J. Cauldwell and A. Byrne have boosted our prestige even higher by impressive victories in the Olympics. Well done.

Hurling.—The hurling position in Ireland is quite simple—Wexford are undisputed champions. Built around such stars as Jim English, who captained this year's team, Ned Wheeler, and, of course, the famous Rackard brothers, this Wexford team must surely be one of the most powerful teams of all time. Ample proof of this is shown in the impressive number of trophies they have won in the past two years. These include the All-Ireland (twice), National League (once), Oireachtas (twice) and Leinster S.H. Championship (twice). In addition to these trophies, Wexford have supplied 12 of the Leinster hurling team which won the Railway Cup. Perhaps their greatest performance was in retaining their All-Ireland title with a score of 2-14 as against Cork's 2-8. This was a Ring-inspired Cork team, matching the champions in everything except teamwork. When Cork took a one point lead entering the last quarter, Wexford showed themselves to be true champions by equalising and then adding an additional 1-4. The scenes which followed the final whistle had to be seen to be believed, as Ring was chaired from the field by the opposing backs. Jim English battled his way to the Hogan Stand and to the All-Ireland trophy and respective supporters cheered their lustiest for a great exhibition of hurling.

thrilling 3—3 draw with £250,000 worth of English nobility." Mick Burke clears off the line as Crawford, O'Callaghan and Mack watch anxiously. England's lone forward, Grainger, seems surprised! [By courtesy of "Irish Press"]



Thrills in the 1956 All-Ireland Final at Croke Park, as a high ball creates trouble for the Wexford backs. Maestro Christy can be seen in the thick of the fray.

[By courtesy of
"Irish Press."



Gaelic Football.—Galway are champions as a result of a 3 points victory over Cork in the All-Ireland final. The year, climaxed by a thrilling football decider, was brimful of shocks and thrills. These, in turn, were provided by Wexford over Dublin, Tyrone over Cavan, and to a lesser extent the defeats of Mayo and Kerry by Galway and Cork respectively. As for thrills, one has only to reflect on the Cork-Galway football final, the Tyrone-Galway semi-final and the Munster football final between Cork and Kerry. Following their brilliant exhibition last year, Dublin and Kerry played a series of games in America. Players to create impressions during the championship were: J. Devlin (Tyrone), Eric Ryan (Cork) and S. Purcell (Galway).

Soccer.—The all-round brilliance of Shamrock Rovers and the thrilling 3-3 draw with £250,000 worth of English Soccer nobility dominate the football scene. Taking first things first, the "Hoops" are, without doubt, the greatest football machine seen here for many years. As they play now, they are a fifty per cent better team than last season and at the time of writing have won the first three competitions of the new season, viz.: the President's Cup, the Dublin City Cup and the Shield. As regards the draw with the English League, I would like to offer belated congratulations to the best ever League team to represent Ireland. How that match thrilled the faithful soccer follower who has become accus-

tomed to crushing defeat inflicted upon our team of part-timers! The best "come-back" of the year was that which gave Shamrock Rovers the F.A.I. Cup final at the expense of Cork Athletic. How the crowd loved those last fifteen minutes when Rovers came from 0-2 to take the game and Cup 3-2. In recent years, Ireland's international record has been pretty good and her prestige high. A brilliant 3-0 victory over Germany raises World Cup hopes and emphasises the need for home players. This policy has just paid dividends and all trust that it will be continued. Wembley, here we come!

Tennis.—The biggest crowds seen at Fitzwilliam for some time turned out to see Ireland take on Finland in the first round of the Davis Cup. Although this match was a one-sided affair, the fans were more than pleased, as the home country triumphed 4-1. Germany 4, Ireland 1. Behind this statement there is drama and we are playing in the second round of the Davis Cup. With the score 2-1 and the German No. 1 leading Ireland's No. 1 G. Jackson 2 sets to love, the fans were leaving the courts. But by superb play and courage, Jackson fought back to level 2 all and take the first game in the deciding set on the German's service. But this was the end, Jackson completely fading away to let the German triumph by 6-1. The open champion-

(Continued on page 45)

FOR want of a better nomenclature, my type is generally classified as 'students.' For the benefit of the unenlightened, a student is one who, during a rather prolonged period of unemployment, occupies his time in the pursuance of ideas abstract to himself and to everyone else.

Since it is a well-known fact that the public transport is supplied only for those with fairly large incomes, a student, whose financial status is always in the pink, has to seek other means of lightening the burden that his feet would have to endure. Hence the presence of such a vast number of bicycles on the public highways. Again for the unenlightened, a bicycle is a two wheeled vehicular instrument which is a policeman's only worry and a motorist's only obstacle.

THE CYCLIST, AND HIS ADVERSITIES

So being a student, I must, of necessity (see above), use a bicycle. Now, as most students know, it takes a long time to travel the shortest distance between two points using this mode of transport. I, being a philosophical type by inclination, occupy this time by philosophising. This can be rather dangerous because sometimes one pursues a delightful train of thought to the neglect of such things as policemen, traffic lights and cars. Being also an observant person I have, over a number of years studied the antics of most road users and in particular that scourge of all cyclists—the motorist.

Now a motorist is one who sits in a comfortable seat, and expending only money, reaches his destination with considerable speed (and enjoyment at the expense of yours truly, the cyclist). It is obvious that his rather contemptuous outlook on cyclists and his 'police can't harm me look' is inspired by the fact that his cheques very rarely bounce. These bourgeois of the highways are intent on terrifying the innocent peasant cyclist and use every means at their disposal to achieve this aim and thus make their lives a misery.

From my study, the motorist's most favoured method is to suddenly decide to cease his forward motion. This is done to the consternation of the cyclist who, not knowing his better's intentions, is suddenly confronted with a solid (by kind permission of B. Haley and ensemble)

Harvey Stein
B.Sc. (II. Night)

immovable mass. Thinking of the old quandary of an immovable object meeting an irresistible force, he performs some lightning-like hand and foot work, picks himself up and proceeds to call all sorts of things down upon the head of the delighted motorist.

Then there is the night-hawk. He is the person who insists on displaying to the bewildered populace that the £1,000 (plus or minus) that he paid for his super bus fare saver includes the additional pleasure of dazzling headlights. So on a dark night he flashes along with a 'sound barrier here I come' look and the cyclist from his uncomfortable seat is dazzled

by what appears to be two searchlights out on a spree.

But by far the most potent weapon with which the motorist is armed is the horn. Of all the horns in existence, none can equal the dream shattering and head splitting ones with which the motorist is armed. However, let it be said at once that there are different types of users of this fearsome instrument. There is the aggressive type who sees a poor sweating cyclist and says to himself "I'll shift him by hook or by crook" and with a smile of relish closes his finger on the horn button—and fires! The cyclist, aroused from his philosophising, leaps up from his saddle, careers around the road, just managing to miss our horn blower, who sweeps by with a gleeful look on his face (and not much attention to the art of steering). Then there is the type who, having had a good dinner, is feeling rather good and at peace with the world and cyclists and then proceeds to shift the latter with a gentle little fanfare. He then passes with an apologetic smile and an 'I don't know what got into me look' in his eyes.

Of course one must not forget the character who, like Archimedes suddenly yelping "Eureka" in his bathtub decides to turn left. A flick of his finger indicates to the universe his momentous decision. But does he turn? Of course not. It is immediately revoked. Hence to the bewildered cyclist he looks like a turf

accountant signalling to a distant companion. And he has the audacity to enquire why the cyclist cannot understand a perfectly normal signal!

Naturally, mention must be made of the ultra-mechanised one who decides to remove himself from his seat of comfort to somewhere else. He opens the door—and is amazed to find a cyclist entangled with the said door or sprawling, gesticulating, up *terra extra firma*. No doubt wondering what on earth cyclists are coming to these days, he departs.

Then we have him who, with smooth efficiency, reaches the traffic lights and jams on the brakes. What is so strange in this. Admittedly a lot of us do stop at these nuisances. But our pal is different. He just has to prove that his vehicle cannot only travel in a forward direction but that it can also move backwards. Amazing! This spectacle of a motor moving rear-ways looks amusing and certainly creates some funny chaos, which is often quite embarrassing. He can do three things (and quite often he does) (a) hit the car behind (which is insured), (b) knock a cyclist off his perch (who is uninsured), (c) continue in this silly direction until the lights change.

As I have already stated, I am inclined to be rather philosophical (a vague term) and having experienced all the above mentioned scourges, I treat them with an appropriate manner. However, on one occasion I did lose my contemplative atmosphere. I was cycling along, thinking (my thoughts at the time were personal and hence cannot be elucidated). I approached a corner and, suddenly, was brought rudely back to reality by a loud horn symphony. I glanced hastily and fearfully around and saw a ferocious

chap attempting to turn the corner, driving an expensive car (for the students' benefit, a definition of this has already been given). I wobbled, put my feet on the ground and (having no such luxuries as brakes) managed to stop. As of one accord we alighted, me from my hard saddle and he from his seat of luxury. We accosted one another.

"Why don't you idiots watch where you are going," he yelled furiously.

"The question is certainly appropriate to your behaviour," I replied courteously.

"People like you should never be let loose on the roads, you are pure, unadulterated, death," he said bitterly.

"On the contrary, sir, we of the proletariat know how to observe the road code. It is your type, sitting in monstrosities such as that, that is the danger."

"Young man, I dislike your attitude. I suggest that the police station just up the street is the correct place to settle this.

"Very well, sir. I shall be only too happy to accommodate you."

I stalked over to my machine, he stalked over to the monstrosity, opened the door, ensconced himself, closed the door with a bang and turned the corner. I proceeded straight up the street as I had originally intended.

Note (1) my calmness, (2) the non use of bad language by me (nothing to do with the censor) and (3) my utter contempt for the motorist. Using these three points a cyclist should live a long life on the roads—that is if he does not die from loss of energy or frustration before the appropriate time. So long live cyclists. I won't say anything about motorists.

IRISH AND THE ATOM

(Continued from page 33)

time, has laid hidden in the nucleus of the atom.

This store of energy was, for the first time, utilised in 1945 when the atomic bomb was dropped on Japan. The war had ended and the atomic age begun. Man had never at any time before in history been given so dramatic a demonstration of the technical consequences of a scientific discovery, nor any previous discovery had political and military consequences so far-reaching and at once inspiring and terrifying.

It is clear from this short review that

the Irish, though subject to a foreign invader who tried to crush and depress our educational advancement, strove and succeeded in the field of Science. Let us, the potential scientists of this free, democratic nation — Ireland, vigorously resolve to advance science still further for the sake of our fellow beings and in order to preserve that great tradition created by our predecessors. Civilisation rides on the hub of engineering and scientific progress. Let the layman have faith in the scientist and if it be God's Will, atomic energy will progress still further and solve still more of our problems.

A R T

Anne Harkin

IT comes quite suddenly—a flash of inspiration, you long to express yourself in some way, music, poetry, perhaps a painting. For a breathless moment you are exalted and then gradually you descend from the heights back to the ordinary things of life. Gazing in amazement at your effort, you wonder: Was that inspiration born in me? Did I become for a time one of the few elect to whom many things are revealed? The desire within you to create something, to express the emotions with vivid realism—that is art.

Art starkly reveals the best in people for it lays bare the mind. It shows that evil is not the pre-dominant passion and that images of beauty and love, to the exclusion of all else, often flow forth through the brush or pen. The power of successful self-expression is not given to many, and so it is that artistically inclined people are often regarded as being somewhat odd. But men of art have grown accustomed to this popular conception. They live in a world apart: a world of fantasies and dreams; a world of deep and complete joy. They work diligently and starve without complaint so that one day they may reach the ultimate goal of all artists—recognition, and that future generations may venerate their work, destined to stand forever as an immortal monument consecrated to their memory.

Art, being the expression of deep set emotions, is a highly personal matter. The mind of one man is not the same as that of his next-door neighbour; neither is the art of one man the same as that of the next. Each has a distinct flavour, peculiarly its own, a particular message to broadcast. Contrast the simplicity, almost crudeness, of Giotto, with the ethereal touch of Fra Angelico; Michaelangelo is strong and forceful, while Botticelli is dainty and aerial.

Many of to-day's artists have placed so much emphasis on the personal factor in art that one almost needs to have the artist standing by to explain the different points to his admirers. Personally, if modern art reveals the true expression of their emotions, I would rather not be in that emotion!

Modern art, as we know it, is really a development of the theory that all the seemingly endless shapes and forms in nature emanate from a basic four—sphere, cone, cube and cylinder. Modern art grew up in France, with Paul Cezanne as its primary exponent. His revolutionary ideas were not accepted initially, in fact he was almost sixty when his first one-man exhibition was held. He was regarded as a failure—even by his own family; but his way of painting was so deeply ingrained in his nature, that he found it impossible to paint in any other style. People soon forgot about him, and his pictures were known only to a few artist friends, among them Renoir and Degas, who were themselves regarded as being somewhat eccentric. It was not until he died that Cezanne's art was appreciated generally and now he is honoured with the priceless title of 'Master of Modern Art.'

The Renaissance saw a religious and cultural revival, though this does not mean that the artists of that time were more spiritually minded than their successors. Taking Botticelli as an example, we find that one day he would paint a pious picture to set all Florence marvelling and the next he could be heard exhorting his friends to 'eat, drink, and be merry, for to-morrow we die'. At this time many of the great churches and basilicas of Europe were built and all the best artists were commissioned to decorate them. But during the Renaissance, more work was to be found in other spheres and the monopoly of the religious motif was broken by the introduction of portraiture.

There are many art galleries in Dublin but it is amazing how few young people visit them. Some art will not impress you but much of it is worth going to see. When you decide to take the plunge and visit an art exhibition, it would be best to read the critiques concerning the particular artist and remember the particular points made. But do not adopt the critics' point of view altogether. Be independent in

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SOJOURN IN SPAIN

P. A. O'Neill (Senior Science)

We remained unconcerned until a revolver suddenly presented itself in the doorway, giving great importance to the officer behind it, with profuse apologies he disappeared into the night. This startling apparition tempted me to look outside, and on the platform of the tiny station, a squad of civil guards was spaced at intervals, each man with a sten-gun at the alert. I doubted if this were due to our reputation having travelled before us, and I was still in doubt when the train moved on uneventfully to Madrid.

The University of Madrid is one of the most modern in the world, and the particular building which housed us had been completed only two months previously. The students have a peculiar out of term habit of sleeping by day and studying by night. They dress exceptionally well, are embarrassingly generous, and work and play with equal zeal. It is interesting to note that to complete an engineering course at Madrid requires eight years of full-time study, although a medical degree may be taken after five years. The University is built in the modern sector of the city where the streets divide the buildings in rectangular blocks. Near here is the Air Ministry which houses not only the office of the Spanish Air Force, but also those of the United States. The American, anxious to make a good impression on the Spaniards, are the best-behaved and best-dressed in Europe. West of the old quarter is the royal palace and nearby the twenty-seven storey Edificio Espana, the tallest building in Spain.

Contrary to popular opinion, football in Spain is a more popular sport than bull-fighting. Sums of more than £100,000 have often been paid in single transfer fees for players and individuals can draw salaries of many thousands of pounds a year. Attendances of 80,000 are commonplace in Madrid in comparison with 20,000 maximum at the bull-ring. To the tourist, the matador is the epitome of a Spaniard and almost inevitably we attended the corrida.

With a fanfare of trumpets and a deafening cheer, the bull enters the ring. The noise agitates him and he tosses his head angrily as six chulos advance periodically from six gaps in the encircling barrier, only to be chased back whence they came. These men are

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TO the average Irishman, the mention of Spain brings visions of an exciting and mysterious land of crackling castanets and fighting bulls, of soothing guitars and heady wine. And so it is, for Spain is a land without parallel in Europe.

In places the land rises in long sharp ridges, which the Spaniards call sierras, or saws. On the central plateau much of the land is barren, shimmering under a metal sky, without even a blade of grass to be seen for miles. As we rolled along in the train, our attention was riveted to the small columns of smoke, rising at intervals from the ground. Here were the famous cave dwellers, so numerous around Granada, but in this barren countryside we could not even hazard a guess at their means of livelihood. Presently we arrived at the junction of La Encina, and were greeted by the usual horde of hawkers. Most of them were engaged in a novel trade but their romantic name of "agua fria" for the contest of their motley bottles did not persuade us that its chemical formula was other than H₂O.

The waving palms and invigorating air of Alicante induced us to rest awhile in Spain's Ballybunion. Some of the best wines in the country are produced here (another reason for staying) and the countryside abounds in sugar-cane, vines, olives, oranges, almonds and date palms. The town itself had an over-abundance of civil guards, a form of special police, but the inhabitants were not disposed to tell us why. Some of the old Spanish laws are strictly enforced and one may not undress on the beach, nor be immodestly dressed in the eyes of the law. Consequently, the bathing belles look like photographs of our mothers in the twenties, with the addition, perhaps, of suntan. One day we went for a swim

about noon and found the beach almost deserted. In due course we learned that the inhabitants, almost in unison, lunch at noon and take their siesta until 4 p.m. or 4.30 p.m. This practice holds good over most of Spain.

Our journey to Madrid was made on a night that provided us with more adventure than we had had during the whole tour. In our compartment on the train were two very pretty girls, one French and the other German. No time was lost in making a sociological survey of their respective nations, which gradually turned to an international language class and then to research into international manners and customs. At one station where, according to my timetable, the train stopped for half an hour, all four of us went to the station restaurant for a "café con leche." About ten minutes later, as we watched dumbfounded, from the restaurant window, the train pulled out. Then, as the American said, "all hell broke loose." There was a torrent of high-pitched French, German and English, punctuated with an occasional "eist do bheal" from my friend. The police were called and, before they questioned us, were dealt a liberal amount of indictory evidence and energetic gesticulation from some Spanish women, this being the prerogative of women all over the world. Eventually order was restored and we spoke one at a time. Fortunately, I was the only one of the quartet who spoke Spanish and, having explained the situation without fear of contradiction, I was informed that our train awaited us on platform II. It had been moved to allow the passage of another train.

Shortly afterwards we were under way again and diplomatic relations resumed in full. About an hour later we made an uncheduled stop.

I must first address myself to that unfortunate creature—the non-Dubliner. This treatise (you may call it what you like when I'm not around) deals with ye olde Dublin pastime of "Boxin' the Fox." It is not, as the non-Dubliner (that son of exterior darkness) might assume, the harrowing spectacle of friend Reynard being cased and made ready for dispatch to the happy hunting grounds. No, you may console yourself, Brer Fox lives on.

I hold forth on the eternal class struggle—the old story of the "haves" and "have nots." I refrain from stating my allegiance, but if you have any old rags, bones or bottles, I would gratefully receive same at the editorial office, hours 9–5. However, we must return to the noble subject of "Boxin' the aforementioned Fox" (although why we should box a poor unfortunate fox I shall never understand—he has worries enough with myxmy-no-well you know what I mean). We

BOXING THE FOX

are first confronted with a group of hungry boys—a not unusual phenomenon for boys are perpetually in that state, being the proud possessors of stomachs akin to bottomless pits. It now behoves us to introduce the scene of action.

We behold the leafy glade, cool in the summer sun, the birds chirping sleepily and swinging lazily on branches softly rustled by the gentle breeze. The bees alone are active, flitting from flower to flower paying their social calls, the flowers themselves droop drowsily and even the breeze murmuring to itself fails to arouse them. The scene is peaceful—a sylvan paradise in the city centre. Or as one of the gank shouts "Fellasi'tsan-orchard." The problem has therefore solved itself—boys meet the apples. The fox is about to be boxed.

THE FUN BEGINS

The preliminaries must now be adhered to and performed according to ritual. One of the gang, usually the smallest, is dared to reconnoitre. Generally the conversation, using the word loosely, goes like this: "Go wan yer afraid," "Who's afraid?" "Yer afraid," "Well you go wan, yeh Davy Crockett," "Yeh want to get done, Smarty?" "Who'll do me?" "I will," "You and who else?" "Me and

me shadeh!"

At this point the gang's patience is exhausted and Mickser (the smallest is invariably called "Mickser") is summarily dispatched over the wall by Jemser, Tomser, Billser and friends, and, of course, Charles. (There is always a "Charles," his mother insists on the full title). If Mickser cries, he has broken a leg, if he remains silent, he is probably dead and the gang passes on; if he reports, after profuse curses, all is well and the attack is pressed home with vigour.

In moments the position stated initially (you have probably forgotten that a position exists, well it does) is reversed and the "have nots" now become the "haves." The trees are laid bare, to the accompaniment of "don't take the small wans, yeh eejet, dey'll poison yeh." The task accomplished and with the bottomless pits temporarily filled, the retreat is prepared. At this stage, invariably at this stage, enters the dog.

ENTER THE DOG

This rather bald statement hardly does justice to the situation; it fails to conjure the electric atmosphere that prevails. Better entry cues have been penned and Shakespeare's direction of "enter the ghost" is hardly of more import. The dog dutifully enters, sniffs and looks around. The gang, paralysed momentarily, naturally try to appease the beast. "Good doggy," "Ata boy Spot," all meet with canine disdain. A painful silence, punctuated by menacing little growls follows, embarrassing to all save Spot, Fido or whatever the confounded animal is called.

Brendan Halligan (B.Sc. II. Night)

The next step is to partly — of course language presents difficulties but depositing some of the apples on the ground, is at least a gesture of goodwill. If this fails to remove the brute, the gang may resort to violence and proceed to pelt Spot (or Fido) with the remainder of the loot. Generally this, too, meets with failure and the only course is to throw Mickser to the ground as a sacrifice. While the dog devours Mickser, the gang stealthily retreat, chastened and once more numbering among the "have nots." Mickser's permanent absence will be later attributed to his "fallin' in the 'nal."

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LIBERAL TECHNICAL EDUCATION

THE report on Technological Education presented to the City of Dublin Vocational Education Committee in June, 1956, concluded its main report thus:—

"The young people trained in the various courses outlined in this report may have to play an important role, not only in the technical sphere, but also in industrial and social life. Many of them will find themselves at the very hub of industrial enterprise as the link between management and the worker. This will demand of them not only professional competence, but also a broad appreciation of human qualities and human values. In such circumstances it is important that their training should cover a wider range than that of purely technical studies and should, above all, be accompanied by a spiritual development of character and an expanding realisation of one's obligation to God, to one's neighbour and to Society."

To those of us who have to provide Technological courses that will be in accord with the sentiments expressed, and the spirit implied, falls this task—a task which is not made easier when we have an educational system that still diverts the most intelligent of our children into schools providing a type of education which, in the majority of cases, ensures that they will never see the inside of a workshop or a science laboratory. The old conceptions of education, the traditional anti-scientific bent of yester-years, still dominate educational values, and added to this we have an apathy on the part of industrialists towards formal processes of learning.

This attitude, though now somewhat modified, is still with us and

has made its influence felt to some extent in having technical education down-graded and regarded as the poor relation in the general system. The general amenities, the positions of technical schools—often in slum areas in urban centres—all contribute to this outlook.

It is not, therefore, surprising that technical education developed an aim that was narrow in its conception, and was regarded by many as something that was tacked-on forming an unnecessary appendage. Regarded as a part-time occupation for teachers and students, as well as being an occupant of sparetime buildings, it came to be looked on as something strictly utilitarian, necessarily producing quite inferior types to those trained in the classical tradition. But surely (as Sir Vincent Tewson said, speaking at the Annual General Meeting of the Union of Educational Institutions in Birmingham), "The theme of man as the maker and user of tools could, provide as noble an inspiration for liberal education as the theme of Man, the political philosopher, or Man, the creative artist"? In this way the conception of technical education itself might be widened, and the way opened for its absorption into the main stream of our educational progress and development.

What is required, and urgently required, is some process whereby we can broaden technical education and prevent its development on too narrow lines—I have called it a "liberal technical education." It is to that task that we in technical education must concentrate our energy in the future, especially as the pace of technological education quickens.

I, personally, do not think that the broad outlook we require to encourage in our technicians and

technologists can be attained by merely adding liberal subjects to their technical studies, although in Russia they apparently think it can. Whilst I will agree that it helps, it is not the complete story—it must go considerably deeper than a mere acquisition of knowledge gained from a passing acquaintance with the liberal arts. The end must be achieved through the technical course as a whole. It must have that concept or code that I referred to in my opening paragraph: "Above all it must be accompanied by a spiritual development of character and an expanding realisation of one's obligation to God, to one's neighbour and to Society."

In conclusion, I quote from the final article on "Manpower in a Technical Age" by Sir Eric Ashby, President and Vice-Chancellor of Queen's University, Belfast (published in the "Irish Times" Dec. 4th, 1956): "I must say in all seriousness that we cannot survive in an age of technology with the education of yesterday. At school, children must learn either physics and chemistry, or they may find themselves obliged to learn Russian." We can no longer afford the luxury of a classical education for the intelligent majority of the nation; that broadening of intellect that presumably came from a study of the humanities must now come from a study of the sciences and with it, its own philosophy. What nobler ideals could we use to establish liberal technical education than the ones springing from our common faith, inspired as they are by a common hope—the Divine Ideal, the Ideal of Personal Esteem and the Patriotic Ideal.

Martin M. Gleeson, M.A., B.Comm.,
Chief Executive Officer
Vocational Education Committee
City of Dublin.

SENIOR STUDENTS' UNION

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representatives from the proposed School Canteen and Bookshop. This Committee would be subordinate to the Executive Council and would function in an advisory capacity with respect to the allocation of grants to the various groups and it would ensure that proper accounts and records would be accurately kept.

It must be emphasised that the scheme outlined above is subject to official ratification by the Dublin Vocational Education Committee. If approval is forthcoming, details will be published and a constitution drawn up by next September. Kevin Street will then have a Senior Students' Union unique in technological education; an experiment in student activity. Its progress will be viewed with interest in many quarters and on its success will depend the facilities to be allocated to the students in the new Institute, and possibly the formation of a Senior Students' Union embracing all the Senior Technical Institutes in the city of Dublin. Everything depends on YOUR co-operation.



"THERE'S GOLD IN THEM THAR TEETH"

dressed identically and to the bull seem like one man popping up all over the place. Occasionally they venture too far into the arena and, being unable to reach the gap in time, show amazing agility in somersaulting over the barrier. On one occasion I saw a bull break one of its horns as it crashed into the barrier missing the chulo by inches.

When the bull is sufficiently agitated the picador rides into the arena. It is the duty of this armoured *Don Quixote* to pierce the hide and flesh between the bull's shoulder blades, thereby allowing access to the heart for the matador's sword. This is the nauseating part of the show to the foreigner, for while the picador presses in his lance to a depth of about 9 inches, the bull makes furious onslaught on the blind-folded horse, which is, however, armoured. Having pierced the hide, the picador gallops away and it is the turn of the *banderillero*. This lively gentleman stands in the path of the charging bull, sticks two coloured darts into the nape of its neck and nimbly removes himself from the danger zone. The darts must actually be pushed in because if they are thrown, they bounce off

the thick hide. This is without a doubt the most hazardous occupation I have ever seen, and the crowd shows its appreciation when a man sticks both of his darts. There are four *banderilleros* to every bull and each man has two darts of his own particular colour. In southern Spain, fire crackers are attached to the darts to goad the bull to greater fury, but this practice is not adopted in Madrid.

With the preliminaries over and amid thunderous cheers, the matador, resplendently dressed, struts into the arena. His peculiar walk is due to the absence of heels on his shoes. The main attraction of the evening usually wears cloth of gold and the others dress according to rank, although no less splendidly. His classic manoeuvres are well-known and having displayed his repertoire in evasion, he proceeds to despatch the bull as quickly as possible. This is his most difficult job because the bull has a far from limited repertoire. Eventually the bull is killed but often the matador shows amazing courage in finishing the drama. With a dainty, side-stepping movement he advances, sword poised, sometimes to within a foot of the bull, so that a mere

lift of its weaving head could gore him. With one deft stroke he plunges the sword into the animal, leaving only the handle visible. As the death blow is delivered the bull crashes to the sand and the victor's bronzed mouth spreads in a pearly grin of triumph.

Occasionally there are diversions from the normal procedure, as when the crowd considers a bull to be too small. The minimum weight for a bull is 350 kilograms, and if, in the opinion of the crowd, he is underweight, an uproar is created until a herd of cows is driven into the arena and the offending animal is removed. On one occasion, when the matador had failed to despatch the bull after six attempts, he was severely criticised by a section of the crowd. Angrily he threw his hat into the spectators; whereupon he was immediately inundated in a shower of hats, fans and fruit.

A first trip to Spain is no less exciting than a trip to the moon and much less expensive. That its people are excellent hosts is illustrated by the fact that the strains of "Isle of Inisfree" floated from the intercom as our friends bade us farewell, exhorting us to come again to Spain. This we certainly will do.

BOXING THE FOX

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I might add that I Boxed the Fox once (only once Padre, only once). I was possessed by Markist tendencies and decided that my neighbour and I should share evenly his apples. However, he did not subscribe to such laudable ideals and consequently he took violent exception to my fruit picking. I escaped by jumping

from a sitting position to the accompaniment of a horrible rending sound. You can use your imaginations!

There is a moral to that story, do not Box the Fox from a sitting position—or if you do, refrain from wearing trousers! Of course this poses a new problem, but I leave you to figure it out. As the undertaker said, "You may rove all over, but I'll nail you in the end."

CHARTER FLYING

(Continued from page 25)

the programme for the performance, another time it was some instruments.

One of the strangest operations was flying on a path due east and west in the path of an eclipse of the sun two hundred miles north of Scotland, while scientists made their observations. Another operation which I will never forget and which gave great happiness with terrible sorrow, was a period spent flying refugees from Communist terror in Berlin, to a new life in Hamburg. I saw many examples of what Communism means during those fateful days.

I spent another five years flying in charter aviation, in a job of infinite variety. Now I am home again in Ireland

ART

(Continued from page 38)

your likes and dislikes, and it might perhaps be better to ignore the critics till you have formed your own opinions.

However, people do not always agree with the critics, in fact they make a point of liking what these gentlemen dislike and vice versa. But do not be rash in your judgment, remember what Degas once said, "Painting is very easy when you don't know how, but when you do, Ah! then it's a different matter."

and my wandering days seem to have come to an end, yet as I sometimes cast a trout fly over a peaceful Irish river, my mind wanders once more over many an eventful mile.

THE teaching of Electrical Engineering subjects commenced in this Institute in 1903. Instruction was given in evening classes only, with the aid of one machine, the Newton Generator, which is still in use. The total space provided was that now in use for lecturing in the present electrical machine laboratory. 1909 saw the commencement of the first day courses. Instruction was provided for the benefit of shift engineers employed by the Tramway Company and the Dublin Corporation, who were normally on night duty.

The School of Electrical Engineering was transferred to the new building, the Technical Institute in Bolton Street, during 1912 and in 1919 the Compton Parkinson twin rotary converter set was purchased.

In 1912, the Department transferred back to the Institute in Kevin Street. About this time too, the day apprentice course for apprentice electricians was inaugurated and proved to be an extremely important step in the development of the Technical Education Scheme for the city. It was mutually agreed by the trade unions and employers concerned, that the two years which the youths spent in studying would be recognised as two years of the apprenticeship. I understand that the scheme failed about 1930 because too many students were recruited and the trade could not absorb them. In the latter years of this course, the present laboratory space was allotted and in 1927 the erection of the switchboard which was dismantled last summer, was undertaken. The scope of the work was increased in 1929 when the Oerlok M.A.G. set and instruments were installed. About this time, too, the A.S.E.A. and G.E.C. transformers were purchased.

During the succeeding years the apprentice electricians from the Sugar Company's factories attended sandwich courses at the Institute. In 1934 some of these young men transported the 100 V Lancaster dynamo from the Town Hall, Rathmines, where it had been used in the Cinema to the electrical machine laboratory. It is still used for heavy current experiments. These students also participated in the wiring of sections of the switchboard, generators and house circuits.

By 1936 the mercury, arc rectifier and the G.E.C. motor generator set had been

ROOM 6

Liam Trundle

installed to widen the scope of the work. In the meantime discussions were proceeding concerning the education in technical subjects of the apprentice electricians employed by the Electricity Supply Board. It was eventually decided to send apprentices to this Institute for a thirteen week course during each of the first four years of apprenticeship. These groups occupied the laboratory for two days per week during the first part of the scheme. For later years, however, the period was increased to three days. During the third and fourth years the students in each group, of which there are three, spend one day per week in the laboratory on machine experiments.

It was gradually becoming apparent that the laboratory layout whilst it had been suitable in earlier years, when the total number of students could be handled in single teacher classes, needed reorganization to cater for larger numbers and a greater variety of work. The purchase of the G.E.C. M.A.G. set in 1954 did not solve many of the problems which were then arising.

The initiation of the part-time day apprentice courses and the whole-time day professional (I.E.E.) courses, created a problem which made it necessary to have the position critically examined. Many discussions took place in 1954 and 1955 with a view to making alterations which would meet the modern needs of various levels of instructions. In 1956 a decision was made, and implemented, to dismantle the existing switchboard and erect some unit boards at selected machine sets.

The result it is agreed is a reasonably satisfactory one. Many experiments can be set up more rapidly than was possible heretofore and in certain cases it has been found possible to cater for two classes at the same time. In the near future many more machine sets will be installed. Whilst they will be useful in various courses, they are especially needed to fulfil the requirements of the graduateship examinations of the Institution of Electrical Engineers.

The altered layout will serve a very useful purpose other than that of im-

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DARKNESS

FROM under the rim of my hat I studied my two fellow travellers. Man and wife. I decided. He was thin, pale faced, about thirty, and was snoring loudly. His wife, looking five years his junior, sat beside him. Dark sweeping eyelashes flicked delicately, as she turned the pages of a fashion magazine.

Softly I cursed them both. When I boarded the Belfast train at Dublin I had in mind a compartment to myself and had walked the length of the train seeking one, but there was none. I should have known better. A main line train would always be crowded. Now I was forced to sit with this couple. If ever I wanted to be alone it was at this moment.

I nursed the brief case on my lap. It was remarkable how such an insignificant object can assume impossible proportions. To me it was the most conspicuous object in the compartment, the centre of attraction. I shifted it to the seat; between my body and the arm rest and put my gloves on top of it, but the yellow contrasted sharply with the dark brown of the brief case. It became more significant. It became bigger and bigger. I grew more and more frightened and desperate. Suddenly the door of the compartment slid open. I started and barely suppressed a cry. "Afternoon tea in the dining car," announced the attendant as he closed the door again. I sighed with relief and slid deeper into the seat pulling my hat further down on my forehead. The train roared on, wheels beating a monotonous tattoo on the rails.

TRIUMPH THEN DISASTER

The lady stirred and cautiously I lifted my eyes and saw her lay down her book. Her sleeping mate turned to a more comfortable position and resumed his snoring. She reached over to waken him, but no, she hesitated and smiled. Standing up, she smoothed her skirt and left to dine alone. Here was the chance to relieve myself of the brief case. Hurriedly I drew the blinds. The stranger slept on as I excitedly opened the window. What luck! Malahide Bay, with the sea breaking against the railway embankment. Feverishly I undid the straps, my fingers fumbling nervously with the buckles. And then it was open! I crammed my pockets full and then I reached out and threw the detestable case

Alan J. Doyle (Radio Service)

into the foam and immediately felt safer. Then to my intense horror, I found the snorer awake and staring at me with a look of blank amazement in his eyes. Panicstricken, I wheeled around and struck him on the head. The blow brought blood from his ear and as he was about to cry out I caught him by the throat. His struggle for breath was terrible at first, gradually grew weaker until he shrank limply into the seat—dead.

My God! I had killed a man. Somehow I must hide the body and escape. Automatically I opened the window and reached out for the handle of the door—locked! Frantically I sought a solution—where could I dump the body—under the seat? No. It was too big. Then I had it! The compartment next door was the toilet. I glanced out the door, an empty corridor and a vacant toilet! Quickly I slipped my arm around the dead man's waist and pulling his arm across my shoulder, I half carried, half dragged him to the toilet. "My intoxicated friend" I reflected.

I AM BETRAYED!

Inside I locked the door, lit a cigarette and leaned limply against the wall. I was still panting and shaken but I tried to consider my position calmly. Next stop Drogheda—stay in the toilet until then—leave the train and let the body go on to Belfast. Any minute now his wife would return to the compartment. Would she be alarmed on seeing he was not there? No! Why should she? Eventually she would become concerned, but by then many miles would separate us. I was safe, but not from a conscience that was already tormenting me. Murder: My God and he lay at my feet. I couldn't look down.

Suddenly there was a commotion in the passage outside, voices rose excitedly. "Five pound notes" I heard someone say shrilly. Oh no! my money, the money I had stolen, it had fallen out of my pockets as I struggled with the body. Now it was betraying me to captivity. And then an authoritative voice spoke, "Here, let's look in the toilet." I was caught! No, God, no. Suddenly and hysterically a woman's voice rose, "my husband, he's gone—and he's blind, please help me."

SPORTS PARADE

(Continued from page 35)

ships also held in Fitzwilliam, saw Budge Patty (men's singles) defeating the Californian holder, Hugh Steward, and Shirley Bloomer beating American Wightman Cup representative, Mrs D. Knodel, in straight sets.

Rugby.—The advent of a great player was minimised by the loss of another. I write, of course, of Tony O'Reilly and Robin Thompson. Thompson has left Rugby Union to play Rugby League, and what a loss he is to the Irish team!

He returned as leader of the Irish pack last season when, after a disastrous start which saw us beaten 6-12 to 20-0 by France and England respectively, he returned to lead them to victory over Scotland and Wales. His leadership and ferocity in the general exchanges were much in evidence in the South African tour which saw the Tourists share the rubber with the Springboks for the first time in many years. The tour also saw Tony O'Reilly blossoming out a brilliant three-quarter, endowed with the necessary qualifications to make an immortal rugby player. One of the best performances by an Irish fifteen since our Triple Crown successes was that which deprived Wales of the 1955-'56 Triple Crown. After a

rather lucky victory over a fourteen man Scottish team, Ireland were given little hope of success. But they rose to the occasion as never before, and at the end of eighty minutes were 11-3 to the good. Stars of this match were Cecil Pedlow at left wing, Jack Kyle, out-half, and M. Cunningham at wing forward. Kyle 3, Cunningham 3 and Pedlow 5 scored for Ireland. Bouquets must be handed to Connaught for their sharing of the Inter-provincial crown and to Bective Rangers for the consistent brilliance against touring teams.

OLYMPIC

Stop Press.—Our victorious Olympic team returns with five medals and this constitutes a record. Hero was, of course, wonderful Ronnie Delaney who captured the 1500 m. in the new Olympic record time of 3m. 41.2secs. His victory does more to place Ireland on the athletic map than any other victory in our history and will naturally result in marked interest in athletics here. Our boxers performed magnificently in taking one silver and three bronze medals—by all accounts it should have been more. However, we will take defeat in the true Olympic fashion. We must not forget the remainder of the team who also played their part to raise the prestige of our country and were not disgraced in glorious defeat.

Alchemist Aches

"Does your girl friend have much to say?"

"No, but that doesn't keep her from talking."

.. ..

Always listen to the opinion of others. It probably won't do you any good, but it will them.

.. ..

Marriage, says a wag, is made up of three rings: (1) engagement ring, (2) wedding ring and (3) suffering.

.. ..

The only person who can handle a pint or a quart while driving is a milkman.

.. ..

Blonde beauty in restaurant, as escort studies bill: "You look ill. Is it something I ate?"

.. ..

Father of bride to wedding guest: What do you mean 'losing a daughter'? Where do you think they're going to live?

One secretary to another: "Oh I just adore my job. It's the work I hate."

.. ..

Her singing was mutiny on the high C's.

.. ..

Bachelor—man who has faults he doesn't know about.

.. ..

It is said by your defending Counsel that you have a dual personality. All I can say is both of you will have to go to prison.

.. ..

The young man who is likeliest to set the world on fire these days is a nuclear physicist.

.. ..

From a parish church magazine: "This bring-and-buy sale was rather like Heaven. Many we expected to see there were absent."

INTRODUCING

MR HODGENS

MOST of our teachers come to the Institute with the prosaic background of a University training or with the colourless experience of the Departmental Course of Manual Instructors. Not so Harold Hodgins, Assoc. I.E.E., Head of the Department of Telecommunications Engineering, who joined the Kevin Street staff as wholtime teacher of Radiotelegraphy under the old Dublin City Corporation in 1918.

Previously, during the years of World War I, he had been employed as a sea-going Radio Officer by the Marconi International Marine Communications Co., Ltd. Among the various ships on which he had seen service was a large French transport from which he had a grandstand view of the historic evacuation of the Gallipoli Peninsula in the first week of January, 1916. His was the last vessel to leave for Alexandria on the morning when the evacuation was complete.

In the summer of 1917, at the height of the submarine warfare he was serving on a British Admiralty oiler which was sunk off the Donegal coast after being twice torpedoed and subjected to two and a half hours of gunfire.

Little wonder then that among the landlubbers he has weathered so well the hectic tempo of Kevin Street during the past 38 years. He has left his permanent imprint on the curriculum by assisting in

The Cinema Apprentices' Course, begun in 1951, was the first part-time day release course in Ireland. Radio Service Work commenced in 1933 at a time long before the City and Guilds of London offered it as an examination subject. Certificates of competence were issued from Kevin Street. The full-time day course in Radio Engineering formed during the last war, has now become the Electrical and Radio Engineering Course. The course for Aircraft Radio Officers was initiated when Aer Lingus commenced operations and continued through the war years until the Civil Aviation Authorities dispensed with radio officers. Most of the radio staffs at Shannon and Dublin airports were trained in Kevin Street. Air navigation and, later, Air Dispatching courses were begun in the post-war period. In 1948 an application was made for Marine Radar equipment, and when it was made available the training of Irish operators began. The post-war Youths-in-Training part-time day release courses are now in their second year of successful operation.

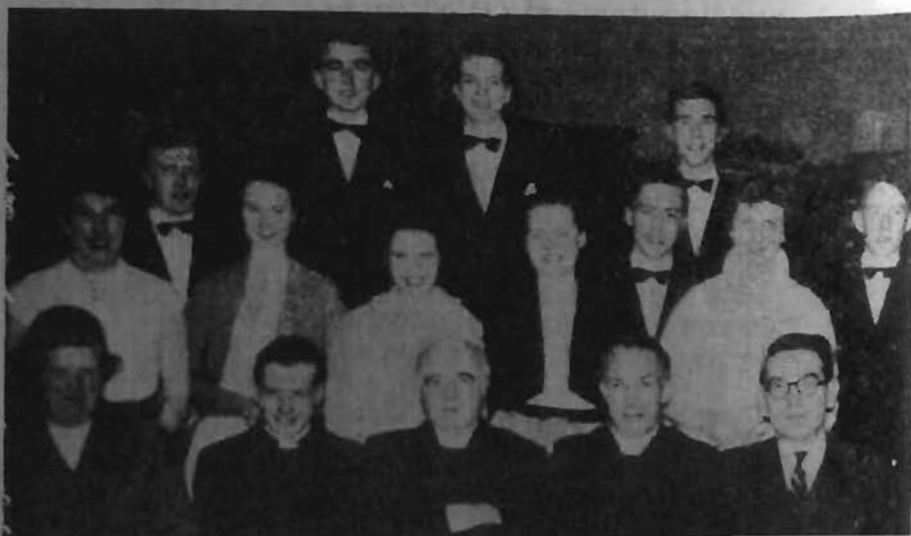
the foundation and organisation of the following courses, which now form part of his department:— Cinema Apprentice Operators, Radio Service Work, Aircraft Radio Officers, Aircraft Dispatchers, Air Navigation and Marine Radar, Post Office Youths-in-Training. There are eight whole-time and twelve part-time teachers under his direction in the Telecommunications department for the current session.

Mr Hodgins is now completing his third year as a member of the Council of the Irish Branch of the I.E.E. He was organising Hon. Secretary of the Radio Association of Ireland which was formed in 1922 and which absorbed both the old Dublin Wireless Club and, later, the Irish Radio Transmitters' Society, becoming known then as the Wireless Society of Ireland. The present Irish Radio Transmitters' Society is the heir to the latter and Mr Hodgins has been its secretary and president for long periods. His two principal hobbies are sketching and amateur radio.

What further of Mr Hodgins the man? Of medium build, impeccably dressed, silver haired, and composed, Harold Hodgins looks more the distinguished businessman than the traditionally harassed schoolmaster. Perhaps it is that inner sense of humour which is belied by an austere exterior that has kept him youthful in spirit after so many years of faithful service to the Vocational Committee—long may he remain so.

Together with the thousands of his past pupils who are scattered throughout the world, we wish him many years of health, happiness and success in the old Alma Mater, for "He has sailed the ocean blue and he's attentive to his duty."

An historic photograph! Below are the combined Rathmines and Kevin Street teams who participated in the first ever dress debate held in our Institute, 18th May 1956. Seated (bottom row, from left): Miss Flanagan, Fr. Barber, S.J. (Rathmines team directors); Fr. Alfred O'Rahilly, Chairman; Fr. Kearns, S.J., Mr T. Dow (Kevin Street team directors).



THE simple theory of the structure of matter evolved by the Greeks had a wonderful flexibility in spite of its unsound nature. A wide variety of compounds and elements were explained upon the basis of the four qualities and the four "elements" which shared them.



Alcoholic distillation is an excellent example. The alembic, a crude form of still, was devised in the first century A.D. Matter, like man, was believed to have a soul or spirit, which parted from the substance on its "death" by heating. Distillation, followed by condensation, led

Alcoholic Alchemists

to the isolation of the spirits, e.g., spirits of salts, etc.

In the ninth century in Arabia, and independently in Ireland in the 11th century, chemists for the first time distilled a fermented liquid.

Earth plus water plus heat = fire plus water

Fermented liquid Spirits of wine

A re-arrangement of the fundamental "elements" was made, and now for the first time alchemists seemed to have isolated a compound of fire and water. The liquid burned quite freely. Later some brave alchemists decided to taste this strange compound—an experiment which had such significant results that tasting is now an established practice in all food and drug laboratories (especially in the Brewing and Distilling Industries). The tasting test also proved to the satisfaction of the alchemists that alcohol was without doubt some compound of the element "fire."

At an early stage aquae vitae (as alcohol was now called) or some of its intermediate products such as "wort," "wash," or "barm" were used as solvents of the diverse materials involved in the search for the Philosopher's Stone. Chaucer wrote:

"Salt tartre, alcaely and salt preparat,
And combust materes and coagult;
Cley made with hors or mannes hair
and oyle,
Off tartre, alym, glas, barm, wort and
argoyle."

The use of aquae vitae as a solvent became very widespread in the sixteenth century. John Damian, private alchemist to James IV in the Royal Laboratory at Stirling Castle, evolved the following formula:

"Alum, Brimstone, cinnabar, gold litharge, orpiment, quicksilver, red lead, salammoniac, saltpetre, silver, sugar, tin, verdigris, vermillion, vinegar, white lead and large quantities of aquae vitae 'small,' 'ordinary' and 'twice drawn'".

Among the famous historical documents which have survived the hazards of time, are the financial accounts of this great laboratory. A careful examination of them by modern scientific investigators

E. J. Rothery, B.Sc., M.I.C.I.

revealed an astonishing fact. In the early stages of the research in the laboratory, the amount of money expended on aquae vitae was only a small portion of the total. As the weeks progressed, the alchemist purchased an ever increasing quantity of this solvent until after some years, the expenditure on aquae vitae exceeded that for all other chemicals.

Scottish alchemy had thus reached a financial crisis which it never surmounted. It cracked under the strain and fell before the rising tide of aquae vitae. The surviving alchemists founded the Distilling Industry in Scotland. Irish alchemists had, of course, beaten them by four hundred years and the name aquae vitae in Ireland had been gaelicized to "uisge beatha."

A similar revolution occurred in other countries, and alchemy became split into two new thriving lines, (a) the Distilling and Brewing Industries, (b) the Chemical Industries. The age of Alchemy had ended, the Age of Alcoholism and Analysts had begun.

ROOM 6 (Continued from page 43)

proving flexibility. In the future, when the proposed new institute has been built, there will be a new machine laboratory to equip and operate. The experience gained in the operation of the present arrangement will be invaluable when the time comes to plan for the future.

The Spirit of Christmas

A Clerical Student.

IT was nearing midnight. The chilled December night was clear and starlit. All was still as the pastor returned home, tired from tending the spiritual needs of his flock. Rounding a bend that overlooked the valley he stayed his horse at the wonderful scene that lay before him. Less than an hour ago he had urged the best from his mount up this slope, but now, he gazed thoughtfully at the distant lights of his parish winking back at him through the stillness. The silence and peaceful quiet touched him deeply. There had been no recent snowfall, yet to him it was a perfect Christmas Eve. His rapture grew as the mantle of peace and tranquility enveloped him in prayerful silence. Thoughts that demanded utterance swelled within him, and the expression of these thoughts gave birth to the beautiful Christmas hymn, "Silent Night," which carries us back to that Bavarian hillside every Christmas.

THE IDEAL CHRISTMAS

Each of us cherishes his own ideal of a perfect Christmas. As in the carol, the night must be silent and still, and who could think of Christmas without snow? Our Christmases differ widely — some could and dull, others wet and blustery — all fall short of our ideal. But when the day dawns, whatever the weather, we readily admit that this is indeed Christmas. We cannot mistake the Christmas feeling; it is ever prevalent and not only pervades oneself but also permeates the air. This feeling, even without the snow or the mistletoe, really makes Christmas.

This unique feeling, which eludes explanation, but makes Christmas the best loved feast of the year, accounts also for its attraction to non-Christians. It

breeds goodwill and generosity; it moves us to forgive old enemies and to make generous resolutions. "We put ourselves out" to make others happy. Need we wonder at the inspiration of generous impulses within us, when this same spirit caused the Allied and German forces to cease fire on Christmas Day 1914? It brought men, weary of war and bloodshed, together to spend that memorable day in peace and joy.

PEACE AND JOY

The peace and joy of Christmas is shared by all. A poor man may feel pain watching his child as it gazes at the gifts of wealthier children, but his household in its simplicity on that day, can far surpass the greater riches. The first Christmas was spent in poverty, and those who celebrate it as it was in reality, are first to receive the message it imparts.

All the customs that the passage of centuries has managed to attach to the celebration of Christmas, have greatly quickened the tempo of life preceding the feast. Shops start the enormous top spinning by their magnificent displays in the race for attraction. Mothers and wives worry not a little just who is to get a card this Christmas. Children fret feverishly how Santa Claus is to get down their chimney. And so it is every Christmas. We hope for a nice quiet feast and promise ourselves not to have the same trouble with Christmas cards, but we write twice as many cards and "not a thing in the house yet."

Yet when it is all over and life becomes monotonous again, we shall remember this Christmas as the most enjoyable of all. We wonder how could it be otherwise, for Christ has been reborn again, bringing "peace to men of good will."

CHRISTMAS GREETINGS

The Editorial Staff of the Alchemist take this opportunity of wishing all its readers a Happy and Holy Christmas. We trust that you will enjoy the peace and happiness of the feast in full measure and that you will receive the benevolence of God's Blessings in the year to come